

Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382

AIR QUALITY PERMIT

Permittee Name: Olin Chemicals and Chlor Alkali, Inc.
Mailing Address: ATTN: Plant Manager
P.O. Box 547
Brandenburg, Kentucky 40108-0547

is authorized to operate a Synthetic Organic Chemical Manufacturing Plant at

Source Name: Olin Chemicals and Chlor Alkali, Inc.
Mailing Address: Same as Above
Source Location: Doe Run Plant, 2450 Olin Road
Brandenburg, Kentucky 40108

Permit Type: Federally-Enforceable Title V Operating Permit
Review Type: Title V, NSR, MACT
Permit Number: V-98-009
Log Number: E849
Application
Complete Date: March 7, 1997

KYEIS ID #: 104-2700-0001
AFS Plant ID #: 21-163-00001
FINDS Number: KYD006396246
SIC Code: 2869

Region: Owensboro
County: Meade

Issuance Date:
Expiration Date:

John E. Hornback, Director
Division for Air Quality

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SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application which was determined to be complete on March 7, 1997, the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This draft permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224.

The permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in the Regulation 401 KAR 50:035, Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. However, these provisions do not shield the source from violations of the applicable requirements being established and documented through other evidence, nor does it relieve the source from its obligation to comply with the underlying emission limits or other applicable requirements being monitored.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

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SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

(1) PROPYLENE GLYCOL - PROCESS VENTS:

DF (11-8) A-8 Vacuum Jet

The following equipment/operations are vented to this Vacuum Jet:
Exhaust from the PG Drying column (Group 2 process vent)

EA (11-202) A- 202 DPG Column Vacuum Jet

The following equipment/operations are vented to this Vacuum Jet:
Exhaust from the DPG column (Group 2 process vent)

EB (11-405) A- 405 MPG Column Vacuum Jet

The following equipment/operations are vented to this Vacuum Jet:
Exhaust from the MPG column (Group 2 process vent)

EC (11-404) A- 404 PG Drying Column Vacuum Jet

The following equipment/operations are vented to this Vacuum Jet:
Exhaust from the PG Drying column (Group 2 process vent)

APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the Propylene Glycol manufacturing area.

Regulation 40 CFR 63 Subpart G applies to the process vents from the equipment listed above.

1. Operating Limitations: None

2. Emission Limitations:

For each of the Group 2 Process Vents:

40 CFR 63.113 (e) - The permittee shall maintain a Total Resource Effectiveness (TRE) index value greater than 4.0 for each Group 2 vent stream and comply with the following requirements:

- a. Provisions for calculating TRE index in 40 CFR 63.115.
- b. Reporting and recordkeeping provisions in 40 CFR 63.117(b), 63.118(c), and 63.118(h).

Compliance Demonstration Method:

For each Group 2 Process Vent:

TRE shall be calculated in accordance with the procedures in 40 CFR 63.115.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - PROCESS VENTS:** (Continued)**3. Specific Testing Requirements:**

Methods and procedures for vent group determination - For the purposes of determining process vent stream flow rate, total organic HAP or TOC concentration or TRE index value, the permittee shall follow the methods and procedures listed in 40 CFR 63.115.

4. Specific Monitoring Requirements:

For each of the Group 2 Process Vents:

In accordance with the provisions of 40 CFR 63.113 (e), the permittee is not subject to any monitoring requirements for Group 2 process vents.

5. Specific Recordkeeping Requirements:

For each Group 2 Process Vent:

- a. 40 CFR 63.118 (b) - The permittee shall maintain records of the measurements, engineering assessments, and calculations performed to determine the TRE index value of each vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments.
- b. 40 CFR 63.118 (c) - The permittee shall keep up-to-date, readily accessible records of
 - [1] Any process change as defined in 40 CFR 63.115 (e); and
 - [2] Any recalculation of the TRE index value pursuant to 40 CFR 63.115 (e).

6. Specific Reporting Requirements:

For each Group 2 Process Vent:

- a. Whenever a process change, as defined in 40 CFR 63.115(e), causes a Group 2 process vent to become a Group 1 process vent, the permittee shall submit a report to the Division within 180 days after the process change. The report shall include the information required by 40 CFR 63.118(g) (1)-(3).
- b. Whenever a process change, as defined in 40 CFR 63.115(e), causes a Group 2 process vent with a TRE index greater than 4.0 to become a Group 2 process vent with a TRE index less than 4.0, the permittee shall submit a report to the Division within 180 days after the process change. The report shall include the information required by 40 CFR 63.118(h) (1)-(3).

7. Specific Control Equipment Operating Conditions: None**8. Alternate Operating Scenarios:** None**9. Compliance Schedule:** None**10 Compliance Certification Requirements:** See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - STORAGE VESSELS:**

EH (M-1K) Propylene Oxide Tank Group 1 tank 3785 m³ (1,000,000 gal.)

Control Equipment

EH (11-400) A-400 Propylene Glycol Scrubber
Countercurrent packed tower column
2.5' diameter x 40' tall 228" of Packed height
Scrubbing liquid: water

APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the Propylene Glycol manufacturing area.

Regulation 40 CFR 63 Subpart G applies to the storage vessels listed above.

1. Operating Limitations:

According to 40 CFR 63.119(a)(2), the owner or operator shall operate and maintain a closed vent system and control device meeting the requirements specified in 40 CFR 63.119(e), or equivalent as provided in 40 CFR 63.121. According to 40 CFR 63.119(e), the owner or operator who elects to use a closed vent system and control device, as defined in 40 CFR 63.111, to comply with the requirements of 40 CFR 63.119(a)(2), shall comply with the requirements specified in 40 CFR 63.119(e)(1) through 40 CFR 63.119(e)(5).

40 CFR 63.119(e)(1): Requirements for reduction of the inlet emissions of total organic HAP by 95 percent or greater.

40 CFR 63.119(e)(3)

40 CFR 63.119(e)(4): Control equipment operation during maintenance

40 CFR 63.119(e)(5): Control equipment operation during malfunction

Compliance Demonstration Method:**Group 1 Storage Tanks**

To demonstrate compliance with the 40 CFR 63.119(e), the owner or operator shall comply with the following requirements:

40 CFR 63.120(d)(1)(i)(A): Design Evaluation Requirements

40 CFR 63.120(d)(2)(i)

40 CFR 63.120(d)(2)(ii): Implementation Plan Requirements

2. Emission Limitations:

40 CFR 63.119(e)(1): The emissions of total organic hazardous air pollutants (HAP) from each Group 1 storage tank sent to the scrubber shall be reduced by 95 weight-percent or greater.

Compliance Demonstration Method:

40 CFR 63.120(d)(1): The owner or operator shall maintain a design evaluation, which includes all the information specified in 40 CFR 63.120(d)(1)(i).

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - STORAGE VESSELS:** (Continued)**3. Testing Requirements:**

- a. According to 40 CFR 63.120(d)(1), the owner or operator shall either maintain a design evaluation, which includes the information specified in 40 CFR 63.120(d)(1)(i) or the performance test as described in 40 CFR 63.119(d)(1)(ii). Performance testing is not required as the permittee has elected to perform design evaluation [40 CFR 63.120(d)(1)(i)].
- b. See **9. Compliance Schedule** for the schedule of initial testing [40 CFR 63.148(b)(1)(i)] and initial notification [40 CFR 63.122(a)(1)] for leak inspection of the closed vent system.

4. Specific Monitoring Requirements:

- a. Pursuant to 40 CFR 63.120d(5), the owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in 40 CFR 63.152(b) and shall operate and maintain the control device such that the monitored parameter remain within the ranges specified in the Notification of Compliance Status. This includes continuous monitoring of scrubbing liquid flow rate.
- b. Pursuant to 40 CFR 63.120d(6), the owner or operator shall inspect each closed vent system as specified in 40 CFR 63.148(b)(1). The annual visual inspections for visible, audible, or olfactory indications of leaks required by 40 CFR 63.148(b)(1)(ii) shall be performed at the end of each one year period starting from the date initial notification [40 CFR 63.122(a)(1)] is submitted. See **9. Compliance Schedule** for the schedule of initial testing and initial notification.

5. Specific Recordkeeping Requirements:

- a. See specific monitoring requirements above.
- b. Records shall be kept as specified in 40 CFR 63.123(a), (b), (f) and (g).

6. Specific Reporting Requirements:

- a. The owner or operator shall report the information as specified in 40 CFR 63.122(a), (b), (c) and (g) to the Division's Owensboro Regional Office. The first periodic report shall cover the first 6 months after the compliance date specified in 40 CFR 63.100(k)(2)(i) of Subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.

7. Specific Control Equipment Operating Conditions:

See operating limitations and **5. Specific Monitoring Requirements** for Group 1 storage tanks.

8. Alternate Operating Scenarios: None**9. Compliance Schedule:**

The initial inspection required by 40 CFR 63.148(b)(1)(i), shall be done according to the procedures specified in 40 CFR 63.148(c). The testing shall be performed by April 3, 1998. The Initial Notification shall be submitted by May 19, 1998.

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(1) PROPYLENE GLYCOL - WASTEWATER STREAMS:

EA (11-202) Barometric Condenser or equivalent from Jet L-202
(Group 2 wastewater stream)

EB (11-402) Barometric Condenser or equivalent from Jet L-402
(Group 2 wastewater stream)

APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the Propylene Glycol manufacturing area.

Regulation 40 CFR 63 Subpart G applies to the wastewater streams listed above.

1. **Operating Limitations:** None
Compliance Demonstration Method: None

2. **Emission Limitations:**
None [The permittee has elected to comply with the provisions of 40 CFR 63.132 (b)(2). Therefore, pursuant to 40 CFR 63.132 (i), the permittee shall comply with the recordkeeping and reporting requirements of 40 CFR 63.146 and 63.147 and shall make the Group 1 or Group 2 determination (40 CFR 63.122(f)(2))].

Compliance Demonstration Method:

See the Testing, Recordkeeping and Reporting Requirements below.

3. **Testing Requirements:**
The permittee shall follow the test methods and procedures described in 40 CFR 63.144 for determining applicability and Group 1/Group 2 determinations.
4. **Specific Monitoring Requirements:** None
5. **Specific Recordkeeping Requirements:**
- The permittee shall keep records of all reports submitted in accordance with 40 CFR 63.146 including the Implementation Plan and Notification of Compliance Status [40 CFR 63.147 (a)].
 - If the permittee uses process knowledge to determine the Volatile Organic Hazardous Air Pollutant (VOHAP) concentration of a wastewater stream and/or uses process knowledge to determine the annual average flow rate, readily accessible documentation of how the process knowledge was used in these determinations shall be kept [40 CFR 63.147 (g)].

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(1) **PROPYLENE GLYCOL - WASTEWATER STREAMS:** (Continued)

6. **Specific Reporting Requirements:** None

7. **Specific Control Equipment Operating Conditions:** None

8. **Alternate Operating Scenarios:** None

9. **Compliance Schedule:** None

10. **Compliance Certification Requirements:** See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - PIPELINE EQUIPMENT:**Process Units:

EG	(--)	Approximate Pipeline Equipment:	4	Light Liquid Pumps
			125	Gas Valves
			136	Gas Flanges
			2	Gas PSVs

Propylene Oxide Storage:

EG	(--)	Approximate Pipeline Equipment:	4	Light Liquid Pumps
			88	Liquid Valves
			20	Liquid Flanges

EG		Wastewater emissions from hotwells, sewers, manholes, and Wastewater Treatment Plant basins or tanks
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APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the Propylene Glycol area.

Regulation 40 CFR 63 Subpart H applies to the pipeline equipment listed above.

1. Operating Limitations:

For the pipeline equipment in HAP service, the permittee shall comply with the dates listed in 40 CFR 63.162 through 63.182 and shall implement a leak detection and repair (LDAR) program containing the following elements:

- a. Each piece of pipeline equipment within the Propylene Glycol area shall be identified such that it can be distinguished readily from equipment that is not subject to 40 CFR 63 Subpart H [40 CFR 63.162 (c)].
- b. When a leak is detected as specified in 40 CFR 63.163 and 63.164; 63.168 and 63.169; and 63.172 through 63.174, the procedures described in 40 CFR 63.162 (f) (1) - (3) shall be followed to identify the leaking piece.
- c. Specific standards for each type of pipeline equipment described under 2. Emission Limitations below.

Compliance Demonstration Method:

Compliance with 40 CFR 63 Subpart H shall be determined by review of the records required by 40 CFR 63.181 and the reports required by 40 CFR 63.182, review of performance test results, and by inspections [40 CFR 63.162 (a)].

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - PIPELINE EQUIPMENT:** (Continued)**2. Emission Limitations:**

The permittee shall comply with Fugitive Emissions standards [40 CFR 63.160 through 63.182]. See below for detailed standards for different services:

a. Standards: Pumps in light liquid service [40 CFR 63.163]:

- | | |
|-----------------------|---|
| 40 CFR 63.163 (a) | Implementation and compliance provisions |
| 40 CFR 63.163 (b) | Monitoring requirements, leak detection levels, frequency of monitoring |
| 40 CFR 63.163 (c) | Repair procedures and time frames |
| 40 CFR 63.163 (d) | Calculation procedures to determine percent leaking pumps and requirements for quality improvement programs |
| 40 CFR 63.163 (e)-(j) | Exemptions for specific types of pumps |

b. Standards: Pressure relief devices in gas/vapor service [40 CFR 63.165]:

- | | |
|-----------------------|--|
| 40 CFR 63.165 (a) | Operational requirements |
| 40 CFR 63.165 (b) | Pressure release procedures |
| 40 CFR 63.165 (c)-(d) | Exemptions for specific types of pressure relief devices |

c. Standards: Open-ended valves or lines [40 CFR 63.167]:

- | | |
|-----------------------|---|
| 40 CFR 63.167 (a)-(c) | Operational requirements |
| 40 CFR 63.167 (d)-(e) | Exemptions for specific types of valves |

d. Standards: Valves in gas/vapor service and in light liquid service [40 CFR 63.168]:

- | | |
|-----------------------|--|
| 40 CFR 63.168 (a) | Operational requirements |
| 40 CFR 63.168 (b)-(d) | Monitoring requirements and intervals |
| 40 CFR 63.168 (e) | Calculation procedures to determine percent leaking valves |
| 40 CFR 63.168 (f) | Leak repair time frames |
| 40 CFR 63.168 (g) | First attempt repair procedures |
| 40 CFR 63.168 (h)-(i) | Exemptions for unsafe-to-monitor and difficult-to-monitor valves |

e. Standards: Surge control vessels and bottoms receivers [40 CFR 63.170]:

- | | |
|---------------|--------------------------|
| 40 CFR 63.170 | Operational requirements |
|---------------|--------------------------|

f. Standards: Delay of repair [40 CFR 63.171]:

- | | |
|---------------|--------------------------------|
| 40 CFR 63.171 | Allowances for delay of repair |
|---------------|--------------------------------|

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - PIPELINE EQUIPMENT:**

(Continued)

- g. Standards: Connectors in gas/vapor service and in light liquid service [40 CFR 63.174]:
- 40 CFR 63.174 (a) Operational requirements
 - 40 CFR 63.174 (b) Monitoring requirements and intervals
 - 40 CFR 63.174 (c) Procedures for open connectors or connectors with broken seals
 - 40 CFR 63.174 (d) Leak repair time frames
 - 40 CFR 63.174 (e) Monitoring frequency for repaired connectors
 - 40 CFR 63.174 (f)-(h) Exemptions for unsafe-to-monitor, unsafe-to-repair, inaccessible, or ceramic connectors
 - 40 CFR 63.174 (i) Calculation procedures to determine percent leaking connectors
 - 40 CFR 63.174 (j) Optional credit for removed connectors
- h. Quality improvement program for valves [40 CFR 63.175]:
- Pursuant to 40 CFR 63.168 (d)(1)(ii), in Phase III, the permittee may elect to implement the following quality improvement programs if the percent of leaking valves is equal to or exceeds 2 percent:
- 40 CFR 63.175 (a) Quality improvement program alternatives
 - 40 CFR 63.175 (b) Criteria for ending quality improvement programs
 - 40 CFR 63.175 (c) Alternatives following achievement of less than 2 percent leaking valves target
 - 40 CFR 63.175 (d) Quality improvement program to demonstrate further progress
 - 40 CFR 63.175 (e) Quality improvement program of technology review and improvement
- i. Quality improvement program for pumps [40 CFR 63.176]:
- Pursuant to 40 CFR 63.163 (d)(2), if, in Phase III, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in the Propylene Glycol area or three pumps in the Propylene Glycol area leak, the permittee shall implement the following quality improvement programs for pumps:
- 40 CFR 63.176 (a) Applicability criteria
 - 40 CFR 63.176 (b) Criteria for ending the quality improvement program
 - 40 CFR 63.176 (c) Criteria for resumption of the quality improvement program
 - 40 CFR 63.176 (d) Quality improvement program elements

Compliance Demonstration Method:

A copy of the leak detection and repair (LDAR) program meeting the criteria listed above shall be kept available at a readily accessible location for inspection.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(1) PROPYLENE GLYCOL - PIPELINE EQUIPMENT:** (Continued)**3. Testing Requirements:**

The permittee shall comply with the following test methods and procedures requirements [40 CFR 63.180 (a)]:

- 40 CFR 63.180 (b) Monitoring procedures, test methods and calibration procedures
- 40 CFR 63.180 (c) Leak detection monitoring procedures
- 40 CFR 63.180 (d) Procedures for determining organic HAP service applicability

4. Specific Monitoring Requirements:

See 3. Testing Requirements above.

5. Specific Recordkeeping Requirements: [40 CFR 63.181]

- a. The permittee may comply with the recordkeeping requirements for the Propylene Glycol and Ethylene Oxide areas in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g. quarterly monitoring, quality improvement) for each type of equipment. All records required by 40 CFR 63.181 shall be maintained in a manner that can be readily accessed at the plant site.
- b. The permittee shall maintain all records pertaining to the pipeline equipment required by 40 CFR 63.181 (b).
- c. For visual inspections, the permittee shall document that the inspection was conducted and the date of the inspection. These records shall be kept for a period of two years [40 CFR 63.181 (c)].
- d. When a leak is detected, the information specified in 40 CFR 63.181 (d) shall be recorded and kept for 2 years.
- e. If the permittee implements any of the quality improvement programs required by 40 CFR 63.175 and 63.176, the records specified in 40 CFR 63.181 (h)(1)-(9) shall be maintained for a period of five years.

6. Specific Reporting Requirements:

The permittee shall submit the following reports:

- a. 40 CFR 63.182 (a)(1), Initial Notification - The permittee has fulfilled this requirement through documentation dated April 19, 1996 submitted to U.S. EPA Region IV and the Division.
- b. 40 CFR 63.182 (a)(2), Notification of Compliance Status - The permittee has fulfilled this requirement in through documentation dated April 19, 1996 submitted to U.S. EPA Region IV and the Division.
- c. 40 CFR 63.182 (a)(3), Periodic Reports - The permittee shall submit to the Division, semiannually, the information required by 40 CFR 63.182 (d)(2). The first periodic report shall cover the first 6 months after the compliance date specified in 40 CFR 63.100(k)(3) of Subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(1) **PROPYLENE GLYCOL - PIPELINE EQUIPMENT:** (Continued)

7. **Specific Control Equipment Operating Conditions:** None

8. **State-Origin Requirements:** None

9. **Alternate Operating Scenarios:** None

10. **Compliance Schedule:** None

11. **Compliance Certification Requirements:** See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(2) ADI/TDI/ADI ADDUCTS AREA:**Storage Tanks

- LG (5-21) 24,000 Gallon, Fixed Roof, Storage Tank M-124
(Control Equipment: Carbon Absorber, 55 gal Carbon Drum) (IPDI Service)
- LH (5-22) 24,000 Gallon Fixed Roof Storage Tank M-125
(Control Equipment: Carbon Absorber, 55 gal Carbon Drum)(IPDI Service)
- LI (5-23) 49,300 Gallon Fixed Roof Storage Tank M-128
(Control Equipment: Carbon Absorber, 55 gal Carbon Drum) (TDI Service)
- LJ (5-24) 49,300 Gallon Fixed Roof Storage Tank, M-129
(Control Equipment: Carbon Absorber, 55 gal Carbon Drum) (TDI Service)

Blend Tanks

- LQ (5-30) 2,600 Gallon Blend
Tank M-103A
- LR (5-31) 2,600 Gallon Blend
Tank M-103B

Tank Truck/Railcar Loading/Unloading Stations

- LK (5-25) Tank Truck/Railcar
(5-26) Loading/Unloading Station #1
(Control Equipment: Carbon Absorber)
- LM (5-27) Tank Truck/Railcar
(5-28) Loading/Unloading Station #2
(Control Equipment: Carbon Absorber)
- LN (5-29) Drum/Cylinder Fill Station
Control Equipment: Packed Tower Scrubber
Countercurrent packed tower column
3.0' diameter x 12' tall 78" of Packed height
Scrubbing liquid: Water

Fugitives

- LP (-) Pipeline Equipment (6 pumps, 40 valves, 173 flanges, 18 OEV)
- LP Wastewater emissions from hotwells, sewers, manholes and Wastewater
Treatment Plant basins or tanks

APPLICABLE REGULATIONS:

Regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to the emissions of potentially hazardous matter and toxic substances.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(2) ADI/TDI/ADI ADDUCTS AREA:** (Continued)**Regulations Not Applicable:**

1. The regulation 401 KAR 59:485, Standards of performance for volatile organic liquid storage vessels (40 CFR 60.110b, NSPS Subpart Kb), is not applicable as the storage vessels associated with the ADI/TDI/ADI Adducts process are exempt [60.110b(c)]. The true vapor pressures of the liquids stored are less than 3.5 kPa.
2. The regulation 401 KAR 60:480 (40 CFR 60.480, NSPS Subpart VV), Equipment Leaks of VOC from SOCMIs processes, is not applicable to the ADI/TDI/ADI Adducts process and Storage Units, as this unit does not produce chemicals listed in Subpart VV.
3. The regulation 40 CFR 63.110, Subpart G, Hazardous Air Pollutant emissions from SOCMIs process vents, Storage Vessels, Transfer Operations, and Waste Water, is not applicable to the ADI/TDI/ADI Adducts process and Storage Units, as this unit does not produce chemicals listed under table 1 of 40 CFR 63, Subpart F as a primary product.
4. The regulation 40 CFR 63.160, Subpart H, Hazardous Air Pollutant emissions from equipment leaks, is not applicable to the ADI/TDI/ADI Adducts process and Storage Units, as this unit does not produce chemicals listed under table 1 of 40 CFR 63, Subpart F as a primary product.

1. Operating Limitations:

401 KAR 63:020:

a. Storage Tanks:

The tanks shall be vented through a carbon absorber (55 gallon Carbon Drum) to control Isophorone Diisocyanate (IPDI) emissions from emission points LG, LH and Toluene 2,4-Diisocyanate (TDI) emissions from emission points LI, LJ.

b. Tank Truck/Railcar Loading/Unloading Stations:

The affected facilities (Emission Points LK and LM) shall vent through a carbon absorber, when loading and unloading operations are performed.

c. Drum/Cylinder Fill Station:

The affected facilities (Emission Point LN) shall vent through the packed tower scrubber system. The scrubber must be in service whenever fill operations are being performed.

d. Product Handling:

The amounts of products handled at ADI/TDI/ADI ADDUCTS shall not exceed the following quantities:

<u>Product</u>	<u>Limit</u>
TDI (Toluene Diisocyanate)	30,000,000 lb/yr.
ADI (Aliphatic Diisocyanate) adduct Blends	6,000,000 lb/yr.
IPDI (Isophorone Diisocyanate)	10,000,000 lb/yr.
H ₁₂ MDI (Methylene-bis (4-cyclohexylisocyanate))	2,000,000 lb/yr.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(2) ADI/TDI/ADI ADDUCTS AREA:** (Continued)**Compliance Demonstration Method:**

- a. The standard operating plan (SOP) for the TDI/ADI/ADI Adducts plant shall specify the procedures to be followed within 60 days after the issuance of the Title V Permit to meet the operational limitations a, b, and c listed above. Copies of these SOP's will be made available to the Division upon request.
- b. All deviations not covered in the SOP must be documented as a Management of Change. In case of a deviation, a engineering review has to be performed within 60 days after the deviation to show that, there was no emissions increase of air pollutants.
- c. Compliance with production limits shall be based on a twelve (12) month rolling total. Monthly records of usage of products listed in 4.) above shall be kept available at the plant.
- d. See the specific testing, monitoring and recordkeeping requirements below.

2. Emission Limitations: None**Compliance Demonstration Method:** None**3. Testing Requirements:**

Pursuant to Regulation 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

- a. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications, the following:
 - i. A device for the measurement of the liquid stream flow rates and vacuum on the packed tower scrubber (Plant ID Number 5-29) associated with the Drum/Cylinder Fill Station. Readings will be taken at the beginning and end of each drum or cylinder fill batch event.
 - ii. The Vapor Indicator connected to the carbon drum.
- b. The standard operating plan (SOP) for the ADI/TDI/ADI Adducts Plant shall specify the procedures given by the manufacturer to alert the plant personnel to replace the carbon drums at breakthrough. It also shall include instructions to install, maintain and operate the carbon drums. Written documentation will be maintained for all variances.
- c. The permittee shall record monthly usage rates of TDI, ADI, IPDI, and H₁₂MDI.

5. Specific Recordkeeping Requirements:

The permittee shall keep records of the following information when filling is being performed:

- a. The liquid stream flow rates and pressure drop across the packed tower scrubber (Plant ID Number 5-29).
- b. Carbon Drums: A log shall be kept of all routine and non routine maintenance performed on the Vapor Indicator connected to the carbon drum. The log shall indicate the date and quantity of carbon drum replacement.
- c. See the **4. Specific Monitoring Requirements** above.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(2) **ADI/TDI/ADI ADDUCTS AREA:** (Continued)

6. **Specific Reporting Requirements:** None

7. **Specific Control Equipment Operating Conditions:**

- a. The scrubber shall be operational at all times when filling is being performed.
- b. The carbon canisters must have the Vapor Indicator meter connected all the times to continuously check for the vapor breakthrough. In case of failure/repair of the Vapor Indicator meter, alternatively the canisters must be checked twice a week for vapor break through.

8. **Alternate Operating Scenarios:** None

9. **Compliance Schedule:** None

10. **Compliance Certification Requirements:** See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(3) POLYMER POLYOLS AREA:**Reactors and Reactor Processes

KH	(31-12)	2,675 gallon R-1 Reactor (Control Equipment: A-3 Scrubber, Ejector Vacuum Jets L-3, L-4, L-5 with one (1) barometric and one (1) shell and tube condenser or T-15 Condenser)
KI	(31-13)	3,600 gallon R-2 Reactor (Control Equipment: A-3 Scrubber, Ejector Vacuum Jets L-6 with three (3) barometric condensers or T-15A Condenser)

Storage and Process Tanks

KL	(31-08)	50,880 gallon Acrylonitrile Storage Tank M-12 (Control Equipment: Carbon Drum)
KK	(31-07)	50,880 gallon Styrene Storage Tank M-11 (Control Equipment: Carbon Drum)
KJ	(31-18)	15,800 gallon Isopropyl Alcohol Storage Tank M-13

Product Loading Stations

KF	(31-10)	Rail Load Station
KG	(31-11)	Truck Load Station

Pipeline Equipment

--	(--)	120 Valves, 210 Flanges, 10 Open Ended Valves, 3 Pumps, 4 PSV
--	--	Wastewater emissions from hotwells, sewers, manholes and Wastewater Treatment Plant basins or tanks

APPLICABLE REGULATIONS:

Regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to the emissions of potentially hazardous matter and toxic substances.

Regulations Not Applicable:

1. The regulation 401 KAR 59:485, Standards of performance for volatile organic liquid storage vessels (40 CFR 60.110b, NSPS Subpart Kb), is not applicable as the storage vessels 31-07, 31-08 and 31-18 were constructed prior to July 23, 1984 and the strip tanks 31-14 and 31-15 have capacities less than 40 m³.
2. The regulation 401 KAR 59:725 (40 CFR 60.660, NSPS Subpart NNN), VOC emissions from SOCM I distillation operations, is not applicable to the Polymer Polyols Plant, as Polymer Polyols Process does not produce chemicals listed in 40 CFR 60.667. Also, the batch processes are exempt under 40 CFR 60.660(c)(3).

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(3) POLYMER POLYOLS AREA:** (Continued)

3. The regulation 401 KAR 60:700 (40 CFR 60.700(b), NSPS Subpart RRR), VOC emissions from SOCM I Reactor Processes, is not applicable to the Polymer Polyols Plant, as the Polymer Polyols Process is a batch unit which does not produce a regulated chemical.
4. The regulation 40 CFR 63.100, Subpart F, Hazardous Air Pollutant emissions from SOCM I processes, is not applicable to the Polymer Polyols Plant and Polymer Polyol Storage Units, as this unit does not produce chemicals listed under table 1 of Subpart F as a primary product.

1. Operating Limitations:

The annual production rate of Polymer Polyol shall not exceed 30,000,000 pounds.

Compliance Demonstration Method:

Compliance shall be based on twelve month rolling total. Monthly records of Polymer Polyol production shall be kept available at the plant.

2. Emission Limitations:

- a. The total VOC emissions from Polymer Polyol process shall not exceed 35 tons per year, to preclude the applicability of PSD for this process. (construction permit C-88-135).
- b. BACT applies to acrylonitrile emissions. **See 8. State Origin Requirements.**
- c. Pursuant to 401 KAR 59:010, Section 3(1)(a), the visible emissions shall not equal or exceed 20% opacity.

Compliance Demonstration Method:

Engineering calculations shall be used to calculate the monthly air emissions from the reactor vents and scrubber. Monthly Records shall be kept of the key operating parameters used in engineering calculations and shall be made available on request by division's personnel. A copy of the modeling run which was submitted with the application log no. F348 shall be available. The annual emission rate (12 month rolling total) shall be calculated as a function of production volume.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(3) POLYMER POLYOLS AREA:** (Continued)**4. Specific Monitoring Requirements:**

The permittee shall monitor and maintain records of the following parameters:

- a. Monthly raw material usage records of IPA, ACN and Styrene.
- b. Monthly production rates of Polymer Polyol.

5. Specific Recordkeeping Requirements: See Specific Monitoring Requirements above.**6. Specific Reporting Requirements:** None**7. Specific Control Equipment Operating Conditions:**

See 8. State-Origin Requirements.

8. State-Origin Requirements:

BACT requirements for the operations listed below are in accordance with the Permit No. C-88-135 issued to Olin Chemicals on 8th December 1988.

a. Operating Limitations: [401 KAR 63:020]

BACT Requirements: BACT is required for controlling Acrylonitrile emissions.

1. Acrylonitrile Loading:

- i. Seal-less pumps shall be used to eliminate seal leaks.
- i. A vapor return line from the storage tanks to the truck shall be used to eliminate storage tank venting during unloading.
- iii. After unloading, all lines shall be purged with nitrogen to the Acrylonitrile Storage tank (Emission Point KL). The tank shall be vented through a carbon canister to remove organic compounds.
- iv. Unloading pump relief valves shall vent to the Acrylonitrile Storage Tank (Emission Point KL).
- v. Minor modifications may be made to minimize numbers of flanges and valves to reduce fugitive emissions. After the modifications, valves and flanges shall be checked for emissions using a Total Ionizables Present (TIP) meter or equivalent.
- vi. Any open end valves shall be plugged or capped to reduce fugitive emissions.
- vii. The operations shall be manned continuously during unloading.
- viii. All spills shall be flushed to the TDA sump and then sent to the waste water treatment facility.

2. Acrylonitrile Storage and Transfer:

- i. The storage tank shall be equipped with:
 - A. Nitrogen Pad
 - B. Carbon Canister
 - C. Cooling Coils to hold tank temperature at 80 F maximum
- ii. Following the transfer of ACN from the storage tank to the monomer mix tank, the line shall be flushed using styrene and then purged using nitrogen. The vent from the monomer mix tank shall be sent to a scrubber.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(3) POLYMER POLYOLS AREA:** (Continued)**8.a. 3. Batch Processing**

- i. All gases resulting from the reaction process shall be sent to a scrubber system and 99.7% of all of the condensibles shall be condensed and sent to the waste water treatment facility.
- ii. All gases resulting from the vacuum phase on Reactor R-1 and R-2 during IPA recovery shall be vented to the scrubber A-3, emission point KH. This scrubber shall exhibit a control efficiency of 99.7% for acrylonitrile emission.

Compliance Demonstration Method:

- a. The standard operating plan (SOP) for the Polymer Polyol plant shall specify the procedures to be followed within 60 days after the issuance of the Title V Permit to meet the operational limitations listed above.
- b. All deviations not covered in the SOP must be documented as a Management of Change. In case of a deviation, a engineering review has to be performed within 60 days after the deviation to show that, there was no emissions increase of air pollutants.
- c. See the specific testing, monitoring and recordkeeping requirements below.

b. Emission Limitations: None

c. Testing Requirements: None

d. Specific Monitoring Requirements:

1. Equipment in Acrylonitrile Service:
Operating personnel shall inspect all equipment for leaks, spills, odors, or other unusual conditions daily. Routine maintenance shall be performed on all equipment to minimize loss of product and raw materials. Equipment in acrylonitrile service that is found to be leaking shall be repaired at the completion of the batch reaction cycle. On a monthly basis, all flanges, valves, pumps, etc., in acrylonitrile service shall be monitored for fugitives losses in accordance with the requirements set forth in Regulation 401 KAR 60:480 (40 CFR 60, Subpart VV), Standards of performance for equipment leaks of VOC in the synthetic organic chemicals manufacturing industry.
2. Control Equipment:
 - i. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications, the following:
 - a. A device for the continuous measurement of the liquid stream flow rates on the scrubber A-3.
 - b. The LEL meter connected to the carbon drum.
 - ii. Manufactures specified procedures shall be followed to install, maintain, operate and replace the carbon drums. The standard operating plan (SOP) for the Polymer Polyol plant shall specify the manufactured specified procedures to be followed within 60 days after the issuance of the Title V Permit.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(3) POLYMER POLYOLS AREA: (Continued)

8. e. Specific Recordkeeping Requirements:

1. Equipment in Acrylonitrile Service

See the operating limitations and monitoring requirements above.

2. Control Equipment:

i. The permittee shall keep continuous records of the following information:

The liquid stream flow rates across the scrubber T-56-3 (A-3).

ii. Carbon Drums: A log shall be kept of all routine and non routine maintenance performed on LEL meter connected to the carbon drum. The log shall indicate the date and quantity of carbon drum replacement.

f. Specific Reporting Requirements: None

g. Specific Control Equipment Operating Conditions:

The liquid flow rate at the scrubber A-3, as a minimum, shall be maintained at 7 gallons per minute.

9. Alternate Operating Scenarios: None

10. Compliance Schedule None

11. Compliance Certification Requirements See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(4) UTILITIES - BOILERS:**

04	(25-03)	Boiler #1A	
05	(25-04)	Boiler #2A	
06	(25-05)	Boiler #3A	
		Primary fuel:	Natural Gas and Residue Gas
		Secondary fuels:	Propane
		Waste fuels:	Used Oil, Polyols, Glycols
		Maximum Rated capacity of each boiler:	187 mmBTU/hr (natural gas) 217 mmBTU/hr nameplate
07	(25-01)	Nebraska Boiler A, Model NS-F-74SH	
08	(25-02)	Nebraska Boiler B, Model NS-F-74SH	
		Primary fuel:	Natural Gas or Residue Gas (Methane, Hydrogen, Propylene),
		Secondary fuels:	Propane
		Maximum Rated capacity:	99.0 mmBTU/hr

STORAGE TANKS

LE	(20-13)	Haz. Waste Storage Tank, (M-1, 11,000 gal) (with carbon absorber)
LE	(20-14)	Haz. Waste Storage Tank, (M-2, 11,000 gal) (with carbon absorber)

APPLICABLE REGULATIONS:

1. Regulation 401 KAR 61:015 for existing indirect heat exchangers applies to the particulate matter and sulfur dioxide emissions from the combustion of natural gas and secondary fuels at Boilers 1A, 2A, 3A (emission points 04,05, 06).
2. Regulation 401 KAR 59:015 for new indirect heat exchangers applies to the particulate matter and sulfur dioxide emissions from the combustion of natural gas and secondary fuel at Package Boilers A and B (emission points 07, 08).
3. Regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to the emissions of potentially hazardous matter and toxic substances.

Regulations not applicable:

1. Emission points 04, 05, 06 are not subject to 401 KAR 60:042 [40 CFR 60.40b (NSPS Subpart Db)], Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, since they were constructed prior to 1984.
2. Emission points 07 and 08 are not subject to 401 KAR 60:043 [40 CFR 60.40c (NSPS Subpart Dc)], Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, since they were constructed prior to 6/9/89.

1. Operating Limitations:

Fuels are limited to natural gas, residue gas, propane, on-specification used oil, Polyols, and glycols.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(4) UTILITIES - BOILERS:** (Continued)**Compliance Demonstration Method:**

Records shall be kept of the type of fuels used.

2. Emission Limitations:**EMISSION POINTS 04, 05 AND 06 (From each Boiler):**

- a. Pursuant to Regulation 401 KAR 61:015, Section 4.(1), emissions of particulate matter from the combustion of either natural gas or secondary fuel shall not exceed 0.293 lb/mmBTU (54.88 lb/hr).
- b. Pursuant to Regulation 401 KAR 61:015, Section 4.(3), the opacity of visible emissions from the combustion of either natural gas or secondary fuel shall not exceed 40%.
- c. Pursuant to Regulation 401 KAR 61:015, Section 5.(1), emissions of sulfur dioxide from the combustion of either natural gas or secondary fuel shall not exceed 4.0 lb/mmBTU (748 lb/hr).

EMISSION POINTS 07 AND 08 (From each Boiler):

- d. Pursuant to Regulation 401 KAR 59:015, Section 4.(1)(c), the emissions of particulate matter from the combustion of either natural gas or back up fuel shall not exceed 0.326 lb/mmBTU (32.3 lb/hr).
- e. Pursuant to Regulation 401 KAR 59:015, Section 4.(2), the opacity of visible emissions from the combustion of either natural gas or fuel oil shall not exceed 20%.
- f. Pursuant to Regulation 401 KAR 59:015, Section 5.(1)(c)1., the emissions of sulfur dioxide from the combustion of either natural gas or back up fuel shall not exceed 1.17 lb/mmBTU (115.87 lb/hr).

Compliance Demonstration Method:

Hourly Emission Rate = [Monthly gas or Secondary fuel consumption rate x
Emission factor listed in Kentucky Emissions Inventory /
(Hours of operation per month)]

For visible emissions:

For each boiler, the permittee shall perform the monitoring and recordkeeping requirements listed under **4. Specific Monitoring Requirements** and **5. Specific Recordkeeping Requirements** during all periods except as provided by 401 KAR 50:055, Section 1(1), and except for the following:

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(4) UTILITIES - BOILERS:** (Continued)**EMISSION POINTS 07 AND 08**

Pursuant to Regulations 401 KAR 59:015, Section 4(2)(b), a maximum of 40% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.

EMISSION POINTS 04, 05 AND 06

Pursuant to Regulations 401 KAR 61:015, Section 4(3)(b), a maximum of 60% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.

EMISSION POINTS 04, 05, 06, 07 AND 08

- a. Pursuant to Regulations 401 KAR 59:010 and 59:015, Section 4(2)(c) and 61:015, Section 4(3)(c), the opacity standard does not apply during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.
- b. Pursuant to Regulation 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown.

For each boiler, the permittee shall maintain records of the occurrence and duration of each incident of fire box cleaning, soot blowing, fire building, startup and shutdown.

3. Testing Requirements:**EMISSION POINTS 04, 05, 06, 07, and 08**

Pursuant to Regulations 401 KAR 61:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

- a. The permittee shall monitor and maintain records of the following information:
 - i. The monthly fuel usage rate (cubic feet/month or gallons per month) for each of the fuel listed above.
 - ii. The monthly hours of operation (hours operated per month) of the boiler.
 - iii. The sulfur content of each type of fuel burned. The sulfur content must be determined at least one time by fuel sampling and analysis or by fuel supplier certification.
- b. Once per calendar day, the permittee shall survey each boiler stack when burning a secondary fuel (used oil, polyols, or glycols) and maintain a daily log noting the following information:
 - i. Whether any air emissions were visible from any individual stack;
 - ii. All emission points from which visible emissions were observed;
 - iii. Whether the visible emissions were normal for the boiler.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(4) UTILITIES - BOILERS:** (Continued)

4. c. If no visible emissions are observed then no further observations are required. If visible emissions are observed, the permittee shall perform one of the following:
- i. The permittee shall perform a Method 9 reading for emission points of concern. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification; or
 - ii. The permittee shall observe and record in the daily log the following information:
 - (1) The color of the emissions;
 - (2) Whether the emissions were light or heavy;
 - (3) The total duration of the visible emission incident;
 - (4) The cause of the abnormal emissions; and
 - (5) Any corrective actions taken.
- d. Carbon absorbers shall be equipped with LEL meters (or equal) to detect carbon breakthrough.

5. Specific Recordkeeping Requirements:

The permittee shall maintain the following records:

- a. The monthly fuel usage rate of each primary fuel at each boiler.
- b. The monthly hours of operation of the boilers.
- c. The sulfur content of each type of fuel oil used. If fuel oil supplier certification is used demonstrate compliance with the sulfur content limits, the records shall contain the following information:
 - i. The name of the oil supplier;
 - ii. A statement from the oil supplier certifying the sulfur content of the oil.
- d. A daily log of the visible emissions readings (see 4. b. and 4.c. above) when burning a secondary fuel (used oil, polyols, or glycols).
- e. Results of the most recent performance tests conducted at each boiler.
- g. A log of carbon absorber meter calibrations and carbon changouts will be maintained.

6. Specific Reporting Requirements: None**7. Specific Control Equipment Operating Conditions: None**

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(4) UTILITIES - BOILERS:** (Continued)**8. State-Origin Requirements:****a. Operating Limitations:**

The company has elected to take the following limits to preclude the applicability of 401 KAR 63:021:

The combined usage of waste fuels at boilers 1A, 2A, 3A (emission points 04,05, 06) is limited as follows:

- Approved waste fuels include polyols, glycols, and on-specification used oils.
- The total quantity of waste fuels shall not exceed 255,000 gallons per year.
- For all the waste feeds, the BTU value shall be greater than 8,000 BTU/lb.
- The boiler waste feed rates shall not exceed 10 gallons per minute.

Compliance Demonstration Method:

See **d. Specific Monitoring Requirements** below.

b. Emission Limitations: None**c. Testing Requirements:**

Pursuant to Regulations 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

d. Specific Monitoring Requirements:

The permittee shall monitor and maintain records of the following information:

1. The monthly fuel usage rate (cubic feet/month or gallons per month) for each of the secondary fuels listed herein.
 2. The monthly hours of operation (hours operated per month) of the boiler.
 3. The BTU content of the waste fuels used shall be tested for each new batch of waste fuel.
- Records shall be kept of the test results.

e. Specific Recordkeeping Requirements:

See **d. Specific Monitoring Requirements** above.

f. Specific Reporting Requirements: None**g. Specific Control Equipment Operating Conditions:** None**9. Alternate Operating Scenarios:** None**10. Compliance Schedule:** None**11. Compliance Certification Requirements:** See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(5) POLYCHEMICALS AREA:****POLYCHEMICALS (Stripper Columns):**

FA	(--)	M Line Stripper Column: A-30
FA	(24-109)	T82A/M-98T Stripper Column
FC	(24-74)	T-93G Vacuum Jets: T93G Stripper Column
FB	(19-175)	Steam Jet:A-106 Stripper Column

POLYCHEMICALS (Reactors):

FC	(19-176)	Polyol Reactor Jets: M-92I/M-93I/M-98R
FC	(19-177)	Polyol Reactor Jets: M-92H/M-93H
FC	(19-178)	Polyol Reactor Jets: M-92G/M-93G
FC	(19-179)	Polyol Reactor Jets: M-92E/M-92F
FC	(24-112)	Polyol Reactor Jets: M-92N/M-93N
FC	(24-111)	Polyol Reactor Jets: M-92L/M-93L
FC	(19-180)	Polyol Reactor Jets: M-93J
FD	(19-182)	Polyol Reactor Jets: M-92C/M-92D
FD	(19-183)	Polyol Reactor Jets: M-92A/M-92B
FK	(19-185)	Polyol Reactor Jets: M-93T
FL	(19-114)	Polyol Reactor Jets: M-92S (includes HQEE process)
FF	(24- 84)	Polyol Reactor Jets: M-92K/M-92M
MA	(24-118)	Polyol Reactor Jets: M-92R
MB	(24-119)	Polyol Reactor Jets: M-93R

POLYCHEMICALS (Pipeline Equipment):

FJ	(19-185F)	Polychemical Process Fugitive VOC Emissions Pumps (LL)-17 Valves (gas)-1348 Flanges (gas)-1268 PSV (gas)-1
FJ	(19-185F)	Wastewater emissions from hotwells, sewers, manholes, and Wastewater Treatment basins or tanks

POLYCHEMICALS (Processes):

(--)	(19-121)	HQEE Flaker and Baghouse
ME	(24-121)	Sugar Silo
MF	(24-122)	Sugar Charge Tank

POLYCHEMICALS (Tanks):

LE	(19-113)	Filter Receiver Tank
	(24-119)	M-92R Polyol Treatment Tank
MG	(19-120)	HQEE Process: IPA Recovery Strip Tank
FD	(19-181)	M-92E Process Tank

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(5) POLYCHEMICALS AREA:** (Continued)

FE	(24-84)	M-93M Precursor Tank
MG	(24-120)	DEA Storage Unit
EH	(8-01)	Propylene Oxide Storage Tank M-1I (vented to A-400)
EH	(8-01)	Propylene Oxide Storage Tank M-1J (vented to A-400)
		Isopropyl Alcohol Tank (M-242)

APPLICABLE REGULATIONS:

1. Regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to the emissions of potentially hazardous matter and toxic substances.
2. Regulation 401 KAR 59:010, Process operations, applies to the sugar processes.

Regulations Not Applicable:

1. The regulation 401 KAR 61:050, Subpart K, Standards of Performance of Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and prior to May 19, 1978; regulation 401 KAR 59:050 (Parts) & 60:111; Subpart Ka, Standards of Performance of Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and prior to July 23, 1984; and regulation 401 KAR 59:485, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984, are not applicable as the storage vessels associated with the Polychemical process are exempt since no petroleum liquids are stored or constructed prior to July 23, 1984, or the size is less than 40 cubic meters, or the vapor pressure is less than the regulated level.
2. The regulation 401 KAR 60:480 (40 CFR 60.480, NSPS Subpart VV), Equipment Leaks of VOC from SOCM processes, is not applicable to the Polychemical process and Storage Units, as this area does not produce chemicals listed in Subpart VV.
3. The regulation 40 CFR 63.110, Subpart G, Hazardous Air Pollutant emissions from SOCM process vents, Storage Vessels, Transfer Operations, and Waste Water, is not applicable to the Polychemical process and Storage Units, as this unit does not produce chemicals listed under table 1 of 40 CFR 63, Subpart F as a primary product.
4. The regulation 40 CFR 63.160, Subpart H, Hazardous Air Pollutant emissions from equipment leaks, is not applicable to the Polychemical process and Storage Units, as this area does not produce chemicals listed under table 1 of 40 CFR 63, Subpart F as a primary product.
5. The regulation 401 KAR 59:725, NSPS Subpart NNN, Standards of Performance for Volatile Organic Compound (VOC) emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations is not applicable to the Polychemical process and Storage Units, as this area does not produce chemicals listed in Subpart NNN.
6. The regulation 401 KAR 60:700, NSPS Subpart RRR, Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes, is not applicable to the Polychemical process and Storage Units, as this area does not produce chemicals listed in Subpart RRR.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(5) POLYCHEMICALS AREA: (Continued)

1. Operating Limitations:

- a. All gases resulting from Polychemicals' reactors shall be vented to scrubber A-25, emission point FI.
- b. All gases emissions from each column, vacuum and reactor jets, or vacuum strip shall be vented to its respective condenser or condensers.
- c. The annual production shall not exceed the following:

Polychemicals	176,500 tons/yr
HQEE Flaker	10,400,000 lbs/yr
Sugar Charge	176,500 tons/yr
Sugar Silo	176,500 tons/yr

Compliance Demonstration Method:

Compliance shall be based on twelve month rolling total. Monthly records of Polychemicals production shall be kept available at the plant.

The permittee shall monitor the operating parameters listed under **7. Specific Control Equipment Operating Conditions** for the scrubber and condensers.

2. Emission Limitations:

- a. The VOC emissions shall not exceed an annual total of 39.42 tons/year for the emission units listed below to preclude the applicability of State Regulation 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality.
- b. For Emission Points ME and MF, PM10 emissions shall not exceed 15 tpy to preclude the applicability of the State Regulation 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality. The PM10 allowable emission rate for each emission point listed below shall not exceed 1.7 lbs/hr, respectively.
- c. The opacity for each PM/PM10 emission point listed below shall not exceed 20% opacity as determined in accordance with State Regulation 401 KAR 59:010. Section 3(1)(a).

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(5) POLYCHEMICALS AREA: (Continued)

EIS (APPLICATION No.)	EMISSION UNIT	CRITERIA POLLUTANT
FK (19-185)	M 93T Reactor, Vacuum Strip	VOC
FI (24-108)	M 93T Reactor, Vent Mode	VOC
FL (19-114)	M 92S Reactor, Vacuum Strip	VOC
FI (24-108)	M 92S Reactor, Vent Mode	VOC
MA (24-118)	92R Reactor, Vacuum Strip	VOC
MB (24-119)	93 Reactor, Vacuum Strip	VOC
MG (24-120)	Diethanolamine Storage	VOC
-- (19-121)	HQEE Flaker	PM/PM10
MF (24-122)	Sugar Charge Tank	PM/PM10
ME (24-121)	Sugar Silo	PM/PM10

Compliance Demonstration Method:

- a. For PM10 hourly emission limits (per emission unit):

$$\text{Hourly Emission Rate} = \frac{\text{[Monthly Processing Rate (tons) (sugar charge) x 0.0849/Monthly hour of operation]}}{1}$$
- b. For PM10 annual emission limits (per emission unit):

$$\text{Annual Emission Rate} = \frac{\text{[12 month rolling process rate (tons)(sugar charge) x 0.0849]}}{1}$$
- c. For VOC emission limits:

$$\text{Annual Emission Rate} = \frac{\text{[12 month rolling process rate Polychemical Production (tons) x 0.4467]}}{1}$$
- d. Compliance with the opacity limits shall be demonstrated through the following methods:
 The permittee shall perform the monitoring and recordkeeping requirements listed under **4. Specific Monitoring Requirements** and **5. Specific Recordkeeping Requirements** during all periods.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(5) POLYCHEMICALS AREA:** (Continued)**3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor and maintain records of the following information:

- a.
 1. The monthly (each calendar month) production Polychemicals for each respective emissions unit listed above.
 2. The hours per month for each sugar process.
- b. Once per calendar day, the permittee shall survey each respect emissions unit for visible emissions and maintain a daily log noting the following information:
 - i. Whether any air emissions were visible from any of the respective emissions unit;
 - ii. All emission points from which visible emissions were observed;
 - iii. Whether the visible emissions were normal for the respective emissions unit.
- c. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform one of the following:
 - i. The permittee shall perform a Method 9 reading for emission points of concern. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification; or
 - ii. The permittee shall observe and record in the daily log the following information:
 - (1) The color of the emissions;
 - (2) Whether the emissions were light or heavy;
 - (3) The total duration of the visible emission incident;
 - (4) The cause of the abnormal emissions; and
 - (5) Any corrective actions taken.

5. Specific Recordkeeping Requirements:

- a. The Polychemicals Process operators shall maintain log sheets on the processing weight of the materials produced in Polychemicals production.
- b. For compliane demonstration purposes, total reactor production from Polychemicals shall be summarized monthly, and from it estimate emissions.
- c. During any onsite visit, specific records (monthly production and estimated emissions) for the respective production area shall be made available for inspection at the request of the Regional inspector.
- d. Maintain monthly logs sheets of A-25 Scrubber, Scrubber Steam Jets, and Condensers operating parameters as indicated under **7. Specific Control Equipment Operating Conditions.**

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(5) POLYCHEMICALS AREA:** (Continued)

- e. Maintain a monthly log of statistical control limits for batch vacuum levels at each reactor vent and stripper column steam jet eductor. Please refer to **7. Specific Control Equipment Operating Conditions** and **Section I, Compliance Schedule**.

6. Specific Reporting Requirements:

Pursuant to State Regulation 401 KAR 50:035, Permits, Section 7, the permittee shall upon request submit information to the Owensboro Regional Office or the Division Office in Frankfort.

7. Specific Control Equipment Operating Conditions:

The Operating parameters indicate parameters to monitor and frequency for the A-25 Scrubber in the Polychemicals Production Area.

A-25 Scrubber Parameters

Mfg.	New Albany Welding	Operating Parameters
Type	Packed Bed	Record the listed operating parameters on a per shift basis Scrubbing Liquid Flow Rate (GPM) Gas Flow Rate (scfm @ 68 deg F) Inlet Gas Temperature (deg F)
Scrubbing Liquid Flow Rate (GPM)	10-80	Same as above.

The Operating parameters indicate parameters to monitor and frequency for the Scrubbers/Steam Jets in the Polychemicals Production Area.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(5) POLYCHEMICALS AREA:** (Continued)**Operating Parameters for Scrubbers (Steam Jets)**

EIS (App. No.)	Eductor I.D.	Control equipment	Operating Parameters
FA (24-109)	A30 Column Steam Jet	(2) barometric condensers	Liquid feed rate Stripper vacuum
FL (19-114)	M-92S Reactor Steam Jet	(2) barometric condensers	Batch vacuum
FB (19-175)	A-106 Column Steam Jet	(2) barometric condensers	Liquid feed rate Batch vacuum
FC (19-176)	M-92I/M-93I/M-98R Reactor Steam Jets	(2) barometric condensers	Batch vacuum
FC (19-180)	M-93J Reactor Steam Jets	(1) barometric condenser	Batch vacuum.
FD (19-182)	M-92C/M-92D Reactor Steam Jets	(1) barometric condenser	Batch vacuum
FD (19-183)	M-92A/ M-92B Reactor Steam Jets	(1) barometric condenser	Batch vacuum
FC (24-112)	M-92N /M-93N	(1) barometric condenser	Batch vacuum
FC (24-111)	M-92L/M93L Reactor Steam Jets	(1) barometric condenser (1) shell/tube condenser	Batch vacuum
FC (19-178)	M-92G/M-93G Reactor Jets	(3) barometric condensers	Batch vacuum
FC (19-177)	M-92H/M-93H Reactor Steam Jets	(2) barometric condensers	Batch vacuum
FC (19-179)	M-92E/M-92F Reactor Steam Jets	(1) barometric condenser	Batch vacuum
FK (19-185)	M-93T Reactor Steam Jet	(2) barometric condensers	Batch vacuum
FE (24-84)	M-92K/M-92M Reactor Steam Jet	(2) barometric condensers	Batch vacuum
FA (24-109)	T-82A/M-98T Column Steam Jet	(1) barometric condenser (1) shell/tube condenser	Stripper flow rate Batch vacuum

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(5) **POLYCHEMICALS AREA:** (Continued)

Operating parameters for condensers

Statistical control limits for batch vacuum levels at each reactor vent or stripper column steam jet eductor shall be established and maintained, and the vacuum shall be monitored/collected on a batch basis for all condensers in the Polychemicals Production Area. Reactor jet condenser system shall be operated within the statistical control limits established by a Startup, Shutdown, Malfunction Plan to be maintained at the facility and made available to the Division upon request. Refer to **Section I, Compliance Schedule**, of the permit.

8. **Alternate Operating Scenarios:** None

9. **Compliance Schedule:** None

10. **Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(6) MICROELECTRONICS AREA:****Reactors**

- HK (20-29) One (1) Positive Sensitizer Reactor Systems, R-100 & R-101
Includes: Exhaust Blower, C-110E
Vacuum Pump, C-210
Separator Tank Scrubber, M-110B
- HK (20-29A) One (1) Rubber Products Reactor Systems, R-200 & R-201
Includes: Exhaust Blower, C-110E
Vacuum Pump, C-210
- HK (20-29B) TEA/TETN Separator Tank Scrubber (with sodium hydroxide scrubber solution)
- HR (20-45) R-300 Reactor (Novolak) System (M-300 Receiver Vent)
Includes : Vacuum Pump After cooler Condensers T-301A, T-302A
Vacuum Pumps P-301A & P-302A (vented to after coolers)
K.O. Pot Receiver Drums F-301H & F-302H Vents
- HS (20-46) R-301 Reactor (Latex/Novolak) System (M-301 Receiver Vent)
Includes: Vacuum Pump Condensers T-301A, T-302A
Vacuum Pumps P-301A & P-302A (vented to after coolers)
K.O.Pot Receiver Drums F-301H & F-302H Vents
- HT (20-47) R-302 Reactor (Latex/Novolak) (1,000-Gallon SS reactor)
Includes: Exhaust Blower, C-302D
Venturi Scrubber and Packed Tower, A-302D with Scrubber
Tank, M-302D (containing sodium bisulfite or sodium hydroxide)
- HW (20-52) Reactor R-303 System with Venturi Scrubber A-303D (containing sodium bisulfite or sodium hydroxide scrubber solution)
- HQ (20-50) Exhaust Blower Packed Tower Scrubber A-303I
Includes: Vacuum pump system G-303A
- Stills**
- HI (20-23) Xylene Still & Vent Condenser T-20B, T-20C
- HF (20-24) Acetone Still & Vent Condenser T-10C

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

HG (20-25) Dirty Acetone Storage Tanks M-1B, M-1C
HE (20-26) Clean Acetone Storage Tank M-1A
HH (20-27) Clean Xylene Storage Tank M-2A
HJ (20-28) Dirty Xylene Storage M-2B

(6) MICROELECTRONICS AREA: (Continued)**Process Fugitives**

HB (20-20) Saylesville Building Exhaust Fans
HB (20-20) Wastewater emissions from hot wells, sewers, manholes and wastewater treatment plant basins or tanks
HB (20-21) Saylesville Building Exhaust Fans
HB (20-22) Saylesville Building Exhaust Fans
HU (20-48) Limerock Building Exhaust Fans
HQ (20-50) 897 Building Exhaust Fans (3)
HM (20-31) Other Fugitives
NB (20-43F) Formaldehyde Fugitives

Dryers

HL (20-30) Positive Sensitizers Dryers Vent, C-2

Tanks/Drum Station/Unloading

NA (20-42) Formaldehyde Storage Tank (with Vent Condenser, T-3B & Carbon Drum)
NA (20-42) Miscellaneous Fugitives
NC (20-45) Truck Unloading (Formalin)

APPLICABLE REGULATIONS:

1. Regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to the emissions of potentially hazardous matter and toxic substances.
2. Fugitive emissions of particulates are regulated by 401 KAR 63:010.
3. Particulate and visible emissions are regulated by 401 KAR 59:010.

Regulations Not Applicable:

1. 40 CFR 60.110b (NSPS Subpart Kb) is not applicable because storage tank capacities are less than 40 cubic meters or 10,568 gallons.
2. 40 CFR 60.700(b) (NSPS Subpart RRR) is not applicable since this process is not a listed SOCMI process unit.
3. 40 CFR 60.480 (NSPS Subpart VV) is not applicable since this process is not a SOCMI process unit.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(6) MICROELECTRONICS AREA:** (Continued)**1. Operating Limitations:** None**Compliance Demonstration Method:** None**2. Emission Limitations:**

- a. Pursuant to Construction and to preclude the applicability of State Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality Permit C-88-014, General Condition 13, the VOC emission rate shall be less than 40.0 tons/year for the following EIS emission points: HE, HF HG, HH, HI, HJ, HM, HK, HL, HM, and HN to preclude
- b. PM/PM10 allowable emission rates for each dryer shall not exceed 2.34 lbs/hr, respectively, and were determined in accordance with State Regulation 401 KAR 59:010, Section 3(2).
- c. The visible emissions for each dryer emission point shall not exceed 20% opacity as determined in accordance with State Regulation 401 KAR 59:010. Section 3(1)(a).

Compliance Demonstration Method:

- a. For PM/PM10 hourly emission limits:
$$\text{Hourly Emission Rate (per dryer)} = [\text{Hourly Processing Rate (Cyclized Rubber)} \times 0.3656]$$
- b. For VOC emission limits:
$$\text{Monthly Emission Rate} = [\text{Monthly Production (Fractionated Rubber)} \times 0.0371]$$

The permittee shall calculate and maintain records of the hourly and monthly PM/PM10, VOC emission rates, respectively. Compliance with the annual emission limit shall be determined as a 12-month rolling total.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor and maintain records of the following information:

- a. The monthly (each calendar month) production listed under (6) **MICROELECTRONICS AREA** (lbs/month) for each respective process listed above.
- b. Once per calendar day, the permittee shall survey each respective emissions unit for visible PM/PM10 and maintain a daily log noting the following information:
 - i. Whether any air emissions were visible from any of the respective emissions unit;

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**6) MICROELECTRONICS AREA:** (Continued)

- ii. All emission points from which visible emissions were observed;
- iii. Whether the visible emissions were normal for the respective emissions unit.
- c. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform one of the following:
 - i. The permittee shall perform a Method 9 reading for emission points of concern. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification; or
 - ii. The permittee shall observe and record in the daily log the following information:
 - (1) The color of the emissions;
 - (2) Whether the emissions were light or heavy;
 - (3) The total duration of the visible emission incident;
 - (4) The cause of the abnormal emissions; and
 - (5) Any corrective actions taken.
- e. Carbon drums shall be equipped with organic breakthrough indicators. The carbon drum shall be replaced once initial breakthrough has been detected. Records shall be maintained to include the date carbon drum was checked, or replaced.
- f. Scrubber systems (Emission Points 20-29A, 20-47, 20-50, 20-52) shall be monitored weekly for scrubber solution strength and circulating flow.

5. Specific Recordkeeping Requirements:

Maintain daily production output records to be summarized monthly.

6. Specific Reporting Requirements:

Monthly and rolling 12 month total data shall be reported to the Owensboro Regional Office on a monthly basis.

7. Specific Control Equipment Operating Conditions:

The process operator shall maintain weekly logs of scrubber system strength and flow, and dates for material additions or replacements.

8. Alternate Operating Scenarios:

Batch operations may occur in different tanks with equivalent scrubber control systems. For future compliance, Scrubbers, M-303I and M-302D will serve as backup controls for each other.

9. Compliance Schedule: None**10. Compliance Certification Requirements:** See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(7) URETHANE SYSTEMS FOAM (USF) AREA:****USF Blend Tanks:**

PL (USF14) A Side Isocyanate: Cylinder Purge Area
Isocyanate Blend Tank M17: A Side-Isocyanate
Isocyanate Blend Tank M23: A Side-Isocyanate
Isocyanate Blend Tank M24: A Side-Isocyanate
Isocyanate Blend Tank M25: A Side-Isocyanate
Isocyanate Blend Tank M26: A Side-Isocyanate

PM (USF15) Polyol Blend Tank M14: B Side-Polyol
Polyol Blend Tank M16: B Side-Polyol
Polyol Blend Tank M27: B Side-Polyol
Polyol Blend Tank M28: B Side-Polyol
Polyol Blend Tank M29: B Side-Polyol
Polyol Blend Tank M30: B Side-Polyol
Polyol Blend Tank M31: B Side-Polyol
Polyol Blend Tank M32: B Side-Polyol
Polyol Blend Tank M33: B Side-Polyol
Polyol Blend Tank M34: B Side-Polyol
Polyol Blend Tank M35: B Side-Polyol
Polyol Blend Tank M51: B Side-Polyol
Polyol Blend Tank M52: B Side-Polyol
Polyol Blend Tank M53: B Side-Polyol
B Side Froth Blender
B Side Cylinder Purge Area
PN (USF16) A Side Froth Blender
A Side Specialty Area

APPLICABLE REGULATIONS:

Regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to the emissions of potentially hazardous matter and toxic substances.

Regulations Not Applicable:

The regulation 401 KAR 61:050, Subpart K, Standards of Performance of Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and prior to May 19, 1978; regulation 401 KAR 59:050 (Parts) & 60:111; Subpart Ka, Standards of Performance of Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and prior to July 23, 1984; and regulation 401 KAR 59:485, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984, are not applicable as the storage vessels associated with the Polychemical process are exempt since no petroleum liquids are stored or constructed prior to July 23, 1984, or the size is less than 40 cubic meters, or the vapor pressure is less than the regulated level.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(7) URETHANE SYSTEMS FOAM (USF) AREA:

1. Operating Limitations: None

Compliance Demonstration Method: None

2. Emission Limitations: None

Compliance Demonstration Method: None

3. Testing Requirements: None

4. Specific Monitoring Requirements: None

5. Specific Recordkeeping Requirements: None

6. Specific Reporting Requirements:

7. Specific Control Equipment Operating Conditions: None

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(8) FLEXIBLE FOAM PRODUCTION AREA:

- 11 (--) Slab Foam Machine Exhaust Blower
- 12 (--) Foam Curing Exhaust Fan
- FK (--) Fugitives (including wastewater)
- LK (--) Flexible Foam (Fugitives-TDI Transfer Terminals)

APPLICABLE REGULATIONS: None

1. Operating Limitations: None

Compliance Demonstration Method: None

2. Emission Limitations: None

Compliance Demonstration Method: None

3. Testing Requirements: None

4. Specific Monitoring Requirements: None

5. Specific Recordkeeping Requirements: None

6. Specific Reporting Requirements: None

7. Specific Control Equipment Operating Conditions: None

8. State-Origin Requirements: None

9. Alternate Operating Scenarios: None

10. Compliance Schedule None

11. Compliance Certification Requirements See General Condition F. 7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(9) FLARES:

IC (13-128) 13-128 Flare: Emergency Backup Flare
John Zink STF-U-30
Unassisted Flare

IF (13-130) 13-130 Flare: Smokeless Flare
John Zink EEF-LH-1168
Air Assisted Flare

APPLICABLE REGULATIONS:

Regulation 401 KAR 63:015 applies to both the flares listed above.

1. **Operating Limitations:** The company has elected to take the following limits to preclude the applicability of 401 KAR 63:021. The rate of waste gases discharged to the 13-130 Flare shall not exceed 50,000 lbs/hr (Permit C-89-067).

Compliance Demonstration Method:

Whenever waste gas is discharged to the 13-130 Flare, the permittee shall maintain continuous records of the waste gas flow rate to the flare.

2. **Emission Limitations:**

Pursuant to Regulation 401 KAR 63:015, Section 3, the opacity of visible emissions from each flare listed above shall not exceed 20% for more than 3 minutes in any one day.

Compliance Demonstration Method:

Compliance with the opacity limits shall be demonstrated through the following methods:
The permittee shall perform the monitoring and Recordkeeping requirements listed under **4. Specific Monitoring Requirements** and **5. Specific Recordkeeping Requirements** during all periods.

3. **Testing Requirements:** None

4. **Specific Monitoring Requirements:**

- a. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications, a device for the continuous measurement of the waste gas flow rate to the 13-130 Flare.
- b. For each episode of waste gas flow to a flare, the permittee shall survey the flare and maintain a log noting the following information once during the course of the episode:
 - i. Whether any air emissions were visible from any of the flares;
 - ii. Whether such visible emissions were normal for the flare.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(9) FLARES: (Continued)

- c. If no visible emissions are observed then no further observations are required. If visible emissions are observed during a waste gas flow episode, the permittee shall perform one of the following once during the course of the episode:
 - i. The permittee shall perform a Method 9 reading for emission points of concern. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification; or
 - ii. The permittee shall observe and record in the daily log the following information:
 - (1) The color of the emissions;
 - (2) Whether the emissions were light or heavy;
 - (3) The total duration of the visible emission incident;
 - (4) The cause of the abnormal emissions; and
 - (5) Any corrective actions taken.

5. Specific Recordkeeping Requirements:

- a. The permittee shall keep continuous records of the waste gas flow rate to the 13-130 Flare.
- b. A log of the visible emissions readings (see 4. b. and 4.c. above) for each episode of waste gas flow to a flare.

6. Specific Reporting Requirements: None

7. Specific Control Equipment Operating Conditions: None

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - FURNACES:**

AA	(12-10)	Kinetic Technology International (10-F-103A) Cracking Furnace A
AB	(12-11)	Kinetic Technology International (10-F-103B) Cracking Furnace B
AC	(12-12)	Kinetic Technology International (10-F-103C) Cracking Furnace C

Specifications for each furnace listed above:

Maximum design capacity:	48.0 mmBTU/hr, each
Primary fuel:	Natural gas
Secondary fuel:	Residue gas (primarily methane and hydrogen)

APPLICABLE REGULATIONS:

Regulation 401 KAR 59:015 applies to all three furnaces listed above.

- 1. Operating Limitations:** None
Compliance Demonstration Method: None

2. Emission Limitations:

- To preclude the applicability of 401 KAR 51:017, the emissions of nitrogen oxides from all three furnaces combined shall not exceed 100 tons per year (Permit C-80-49).
- Pursuant to Regulation 401 KAR 59:015, Section 4.(1)(c), emissions of particulate matter from the combustion of either natural gas or residue gas at each furnace shall not exceed 0.30 lb/mmBTU and 14.34 lb/hr.
- Pursuant to Regulation 401 KAR 59:015, Section 4.(2), the opacity of visible emissions from the combustion of either natural gas or residue gas at each furnace shall not exceed 20%.
- Pursuant to Regulation 401 KAR 59:015, Section 5.(1)(c)1., emissions of sulfur dioxide from the combustion of either natural gas or residue gas at each furnace shall not exceed 1.00 lb/mmBTU and 48.17 lb/hr.

Compliance Demonstration Method:

- For particulate and sulfur dioxide hourly emission limits:
Hourly Emission Rate = [Monthly gas consumption x Emission factor listed in Kentucky Emissions Inventory / (Hours of operation per month)]
- For nitrogen oxides annual emission limits:
Monthly Emission Rate = [Monthly gas consumption x Emission factor listed in Kentucky Emissions Inventory]

The permittee shall calculate and maintain records of the monthly nitrogen oxides emission rates from all three furnaces combined. Compliance with the annual emission limit shall be determined as a 12-month rolling total.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - FURNACES:** (Continued)

- c. Compliance with the opacity limits shall be demonstrated through the following methods:
The permittee shall perform the monitoring and recordkeeping requirements listed under **4. Specific Monitoring Requirements** and **5. Specific Recordkeeping Requirements** during all periods.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor and maintain records of the following information:

- a. The monthly (each calendar month) fuel usage rate (cubic feet/month) for each of the fuels listed herein.
- b. The monthly (each calendar month) hours of operation (hours operated per month) of each furnace.
- c. The sulfur content of each type of fuel burned. The sulfur content maybe determined by a one-time fuel sampling and analysis or by fuel supplier certification. If the natural gas supplier changes or there are changes in the composition of the residue gas, the sulfur content shall have to be recertified.
- d. Once per calendar day, the permittee shall survey each furnace stack and maintain a daily log noting the following information:
 - i. Whether any air emissions were visible from any of the furnaces;
 - ii. All emission points from which visible emissions were observed;
 - iii. Whether the visible emissions were normal for the furnace.
- e. If no visible emissions are observed then no further monitoring is required. If visible emissions are observed, the permittee shall perform one of the following:
 - i. The permittee shall perform a Method 9 reading for emission points of concern. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification; or
 - ii. The permittee shall observe and record in the daily log the following information:
 - (1) The color of the emissions;
 - (2) Whether the emissions were light or heavy;
 - (3) The total duration of the visible emission incident;
 - (4) The cause of the abnormal emissions; and
 - (5) Any corrective actions taken.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(10) LIGHT HYDROCARBON (LHC) AREA - FURNACES: (Continued)

5. Specific Recordkeeping Requirements:

The permittee shall maintain up-to-date, readily accessible records of the following information:

- a. Fuel usage rates, hours of operation, and fuel sulfur content.
- b. A daily log of the visible emissions readings (see 4. d. and 4.e. above) when visible emissions are observed.

6. Specific Reporting Requirements: None

7. Specific Control Equipment Operating Conditions: None

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - COMPRESSORS:**

- AJ (17-19) Cracked Gas Compressor Engine A
- AJ (17-20) Cracked Gas Compressor Engine B
- AJ (17-21) Cracked Gas Compressor Engine C
- AJ (17-22) Cracked Gas Compressor Engine D
- AJ (17-23) Ethylene Refrigeration Compressor A (P2-102 A)
- AJ (17-24) Ethylene Refrigeration Compressor B (P2-102 B)
- AJ (17-25) Propylene Refrigeration Compressor

Specifications for all compressors listed above:

Maximum design capacity: 6.64 mmBTU/hr (for each Cracked Gas Compressor)
3.71 mmBTU/hr (for each Ethylene Refrigeration Gas Compressor)
2.81 mmBTU/hr (for the Propylene Refrigeration Compressor)

Primary fuel: Natural gas

Secondary fuel: None

APPLICABLE REGULATIONS: None

1. **Operating Limitations:** None
Compliance Demonstration Method: None
2. **Emission Limitations:** None
Compliance Demonstration Method: None
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:** None
5. **Specific Recordkeeping Requirements:** None
6. **Specific Reporting Requirements:** None
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None
9. **Compliance Schedule:** None
10. **Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(10) LIGHT HYDROCARBON (LHC) AREA - CONVERTERS:

AK (17-30) Acetylene Converter M-130A

AK (17-31) Acetylene Converter M-130B

APPLICABLE REGULATIONS: None

- 1. Operating Limitations: None**
Compliance Demonstration Method: None
- 2. Emission Limitations: None**
Compliance Demonstration Method: None
- 3. Testing Requirements: None**
- 4. Specific Monitoring Requirements: None**
- 5. Specific Recordkeeping Requirements: None**
- 6. Specific Reporting Requirements: None**
- 7. Specific Control Equipment Operating Conditions: None**
- 8. Alternate Operating Scenarios: None**
- 9. Compliance Schedule: None**
- 10. Compliance Certification Requirements: See General Condition F.7.**

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - STORAGE TANKS:**

LE (17-31)	Methanol Storage Tank, M-129	Fixed Roof	500 gallons
LE (13-03)	Aromatic Distillate Tank, 100A	Fixed Roof	420,000 gallons
LE (13-01)	Aromatic Distillate Tank, 103-A	Fixed Roof	550,000 gallons
LE (13-02)	Aromatic Distillate Tank, 103-B	Spherical Tank	550,000 gallons
LE (17-32)	Methanol Storage Tank, M-1A	Horizontal	15,000 gallons
LE (17-33)	Aromatic Distillate Tank, M-1B	Horizontal	15,000 gallons

APPLICABLE REGULATIONS: None**Regulations Not Applicable:**

1. Regulation 401 KAR 59:485 [40 CFR 60 Subpart Kb] does not apply because each of the tanks listed above has neither been constructed or modified after July 23, 1984.
2. Regulation 401 KAR 57:270 [40 CFR 61 Subpart Y] does not apply to the LHC Area storage tanks since no industrial grade or refined benzene [40 CFR 61.270 (a)] is stored at these facilities.

1. Operating Limitations: None

Compliance Demonstration Method: None

2. Emission Limitations: None

Compliance Demonstration Method: None

3. Testing Requirements: None**4. Specific Monitoring Requirements: None****5. Specific Recordkeeping Requirements: None.****6. Specific Reporting Requirements: None****7. Specific Control Equipment Operating Conditions: None****8. Alternate Operating Scenarios: None****9. Compliance Schedule: None****10. Compliance Certification Requirements: See General Condition F.7.**

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - FUGITIVES EMISSIONS:**

- AL (--) LHC Area Fugitives - The following equipment is in benzene service. *In benzene service* implies a piece of equipment containing or in contact with a fluid that is at least 10% benzene by weight.
- | | |
|-----|--------------------|
| 7 | Light liquid pumps |
| 550 | Gas valves |
| 185 | Gas flanges |
- AL (--) Wastewater emissions from hot wells, sewers, sumps, manholes, and wastewater treatment basins or tanks

Note: The pipeline equipment count listed above reflects an accurate count of the equipment as of the date of issuance of this permit. The permittee may add or remove pipeline equipment from the LHC Area without a permit revision as long as the equipment continues to comply with the requirements listed below.

APPLICABLE REGULATIONS:

1. Regulation 401 KAR 57:040 (40 CFR 61 Subpart J) applies to the pipeline equipment listed above.
2. Regulation 401 KAR 57:035 (40 CFR 61 Subpart V) applies (by reference) to the pipeline equipment listed above.

Regulations Not Applicable:

Regulation 401 KAR 60:480 (40 CFR 60 Subpart VV) does not apply to the LHC area pipeline equipment because no physical changes have been made at the LHC Unit since January 5, 1981.

1. Operating Limitations:

Each piece of equipment listed above shall be marked in such a manner that it can be distinguished readily from other pieces of equipment [40 CFR 61.242-1(d)].

Compliance Demonstration Method: None

2. Emission Limitations:

For the pipeline equipment in benzene service, the permittee shall maintain a leak detection and repair (LDAR) program containing the following elements (as applicable):

a. Standards for pumps [40 CFR 61.242-2]:

- | | |
|---------------------|--|
| 40 CFR 61.242-2 (a) | Frequency of monitoring and visual inspection |
| 40 CFR 61.242-2 (b) | Level at which a leak is detected |
| 40 CFR 61.242-2 (c) | Time frames for repair once leak is detected |
| 40 CFR 61.242-2 (d) | Exemption and standards for pumps equipped with dual mechanical seal system including barrier fluid system |
| 40 CFR 61.242-2 (e) | Exemption and standards for pumps designated as having no detectable emissions |
| 40 CFR 61.242-2 (f) | Exemption and standards for pumps equipped with closed-vent system |

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - FUGITIVE EMISSIONS:** (Continued)

40 CFR 61.242-2 (g) Exemption and standards for pumps located within the boundary of an unmanned plant

b. Standards for valves [40 CFR 61.242-7]:

40 CFR 61.242-7 (a) Frequency of monitoring
40 CFR 61.242-7 (b) Level at which a leak is detected
40 CFR 61.242-7 (c) Extensions of monitoring frequencies
40 CFR 61.242-7 (d) Time frames for repairs once leak is detected
40 CFR 61.242-7 (e) Best practices for first repair attempts
40 CFR 61.242-7 (f) Exemption and standards for valves designated as having no detectable emissions
40 CFR 61.242-7 (g) Exemption and standards for valves designated as unsafe to monitor
40 CFR 61.242-7 (h) Exemption and standards for valves designated as difficult to monitor

c. Standards for flanges [40 CFR 61.242-8]:

40 CFR 61.242-8 (a) Frequency of monitoring
40 CFR 61.242-8 (b) Level at which a leak is detected
40 CFR 61.242-8 (c) Time frames for repairs once leak is detected
40 CFR 61.242-8 (d) Best practices for first repair attempts

d. For all other equipment in benzene service, the appropriate standards in 40 CFR 61.242-1 through 40 CFR 61.242-11 shall be implemented as applicable.

Compliance Demonstration Method:

A copy of the leak detection and repair (LDAR) program meeting the criteria listed above shall be kept available at a readily accessible location for inspection.

3. Testing Requirements:

The permittee shall include the following test methods and procedures in the leak detection and repair program [40 CFR 61.245(a)]:

40 CFR 61.245 (b) Monitoring methods, detection instrument performance criteria, calibration procedures, calibration gases
40 CFR 61.245 (c) Testing requirements for equipment with no detectable emissions
40 CFR 61.245 (d) Procedures for demonstrating non-benzene service

4. Specific Monitoring Requirements:

See 2. Emission Limitations

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(10) LIGHT HYDROCARBON (LHC) AREA - FUGITIVE EMISSIONS: (Continued)

5. Specific Recordkeeping Requirements:

The permittee shall comply with the following recordkeeping requirements [40 CFR 61.246]:

- 40 CFR 61.246 (b) Procedures for identification of equipment once leak is detected
- 40 CFR 61.246 (c) Recordkeeping requirements following detection of a leak (instrument identification numbers, date of detection and repair, repair methods, etc.)
- 40 CFR 61.246 (e) Requirement to maintain lists of all equipment with identification numbers
- 40 CFR 61.246 (f) Recordkeeping requirements for valves designated as unsafe to monitor
- 40 CFR 61.246 (i) Recordkeeping requirements for exemption determinations

6. Specific Reporting Requirements:

The permittee shall submit to the Division's Owensboro Regional Office, a semiannual report containing the information required by 40 CFR 61.247 (b).

7. Specific Control Equipment Operating Conditions: None

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - AROMATIC DISTILLATE LOADING OPERATIONS:**

- (--) Aromatic Distillate Barge/Railcar Loading Operations (vented through a carbon adsorption system)

APPLICABLE REGULATIONS: None**Regulations Not Applicable:**

Regulation 401 KAR 57:300 (40 CFR 61 Subpart BB) does not apply to the aromatic distillate loading operations because the distillate liquid contains less than 70 weight percent benzene [40 CFR 61.300 (b)].

1. **Operating Limitations:** None
Compliance Demonstration Method: None
2. **Emission Limitations:** None
Compliance Demonstration Method: None
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:** None
5. **Specific Recordkeeping Requirements:**
The permittee shall maintain and update records of the following information [40 CFR 61.305 (i)]:
 - a. Weight percent of benzene in the aromatic distillate being loaded.
 - b. The type of vessel loaded (i.e., tank truck, railcar, or marine vessel).
 - c. The annual amount of benzene loaded into each type of vessel.
6. **Specific Reporting Requirements:** None
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None
9. **Compliance Schedule:** None
10. **Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(10) LIGHT HYDROCARBON (LHC) AREA - MISCELLANEOUS:**

AD (12-13) Furnace Decoking Operations

APPLICABLE REGULATIONS:

Regulation 401 KAR 59:010 applies to the furnace decoking operations.

1. Operating Limitations: None**Compliance Demonstration Method:** None**2. Emission Limitations:**

- a. Pursuant to Regulation 401 KAR 59:010, Section 3.(2), emissions of particulate matter shall not exceed 2.34 lb/hr.
- b. Pursuant to Regulation 401 KAR 59:010, Section 3.(1), the opacity of visible emissions shall not equal or exceed 20 percent.

Compliance Demonstration Method:

- a. For the mass emission limits:

Hourly Emission Rate (lb/hr) = [Hours of decoking performed per month x
Emission factor listed in Kentucky Emissions
Inventory]

- b. Compliance with the opacity limits shall be demonstrated through the following methods:
The permittee shall perform the monitoring and recordkeeping requirements listed under **4. Specific Monitoring Requirements** and **5. Specific Recordkeeping Requirements** during all periods.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

- a. During periods of furnace decoking operations, the permittee shall survey each decoking drum and maintain a daily log noting the following information:
 - i. Whether any air emissions were visible from any of the drums;
 - ii. All emission points from which visible emissions were observed;
 - iii. Whether the visible emissions were normal for the drum.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(10) LIGHT HYDROCARBON (LHC) AREA - MISCELLANEOUS: (Continued)

AD (12-13) Furnace Decoking Operations

4. b. If no visible emissions are observed then no further observations are required. If visible emissions are observed, the permittee shall perform one of the following:
- i. The permittee shall perform a Method 9 reading for emission points of concern. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification; or
 - ii. The permittee shall observe and record in the daily log the following information:
 - (1) The color of the emissions;
 - (2) Whether the emissions were light or heavy;
 - (3) The total duration of the visible emission incident;
 - (4) The cause of the abnormal emissions; and
 - (5) Any corrective actions taken.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of the number of decoking operations performed per calendar month.
- b. A log of the visible emissions readings (see 4. a. and 4.b. above) performed during the decoking operations.

6. Specific Reporting Requirements: None

7. Specific Control Equipment Operating Conditions: None

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(11) 2A1 SURFACTANTS - REACTORS & REACTOR PROCESSES:

- | | | | |
|----|---------|--|--|
| -- | (R-100) | *Alkylation Reactor:
- 500 gallon Decant Tank | 4,000 gallon capacity |
| -- | (R-101) | *Sulfonation Reactor:
- Decant Tank: | 4,000 gallon capacity
500 gallon capacity |
| | (T-103) | - Overhead Condenser
for SO ₂ /SO ₃ vapors | |
| | (M-103) | - Holding Tank for
SO ₂ /SO ₃ vapors: | 300 gallon capacity |
| -- | (--) | Ammonia Charging: | Direct pumping into Reactor R-100 from ammonia drums. Drum opening and pipeline equipment fugitive losses: 1 pump, 4 flanges, 2 valves |
| -- | (--) | Catalyst Deactivation: | Deactivation of aluminum trichloride with water, hydrogen chloride emissions to caustic scrubber |
| -- | (--) | Sodium Hydroxide
Storage and Transfer: | 45 flanges (appropriate count) |
| -- | (--) | *SO ₂ /SO ₃ Charging and
Sulfonation reaction: | SO ₂ vapors condensed in T-103 |
| -- | (--) | *Post-Sulfonation reactor
heating and cooling
cycles: | SO ₂ vapors sent to caustic scrubber |
| -- | (--) | *Reactor System
Fugitives: | 33 flanges, 12 valves, 3 safety valves, 4 open end valves, 1 seal-less pump (approximate count) |
| -- | (--) | Wastewater emissions from hot wells, sewers, manholes, and wastewater treatment plant basins or tanks. | |

*SO₂ emission source

APPLICABLE REGULATIONS: None

1. **Operating Limitations:** To preclude the applicability of 401 KAR 51:017:
 - a. During the sulfonation reaction, Reactor R-101 shall be vented to the T-103 condenser to condense the sulfur dioxide vapors in the reactor exhaust.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(11) 2A1 SURFACTANTS - REACTORS:** (Continued)

- b. Following the sulfonation reaction, Reactor R-101 shall be heated to remove any residual sulfur dioxide. During this heating cycle, the reactor shall vented to the T-103 condenser to condense the sulfur dioxide vapors in the reactor exhaust.
- c. During the cooling cycle following the heating cycle, Reactor R-101 shall be vented to the caustic scrubber to remove sulfur dioxide vapors from the reactor exhaust.

Compliance Demonstration Method:

- a. The standard operating plan (SOP) for the surfactants plant shall specify the procedures to be followed to meet the requirements listed above.
- b. Any deviations from the SOP shall be documented through the Management of Change Process.

2. Emission Limitations:

See **Group Requirements - 2A1 Surfactants Plant.**

Compliance Demonstration Method:

See **Group Requirements - 2A1 Surfactants Plant.**

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements: None**5. Specific Recordkeeping Requirements:** None**6. Specific Reporting Requirements:** None**7. Specific Control Equipment Operating Conditions:**

See **2A1 SURFACTANTS - SCRUBBERS** requirements.

8. Alternate Operating Scenarios: None**9. Compliance Schedule:** None**10. Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(11) 2A1 SURFACTANTS - SO₂/SO₃ UNLOADING AND STORAGE:**

- (M-202) *Sulfur Dioxide Pressurized Storage Tank, 12,000 gallons
- (M-224) *Sulfur Trioxide Pressurized Storage Tank, 25,000 gallons
- (--) *SO₂ Truck Unloading Operations (vapor balanced)
- SO₃ Truck Unloading Operations

*SO₂ emission source

APPLICABLE REGULATIONS: None

1. **Operating Limitations:** To preclude the applicability of 401 KAR 51:017:
 - a. During the sulfur dioxide truck unloading operations, Tank M-202 shall be vented to the caustic scrubber. Following the unloading operations, the unloading piping shall be drained of all vapors by depressurizing the unloading hoses and using nitrogen to blow-out the lines. The drained vapors shall be vented to the caustic scrubber.
 - b. Any emissions from the M-202 and M-224 tanks shall be vented to the caustic scrubber.

Compliance Demonstration Method:

- a. The standard operating plan (SOP) for the surfactants plant shall specify the procedures to be followed to meet the requirements listed above.
- b. Any deviations from the SOP shall be documented through the Management of Change Process.

2. **Emission Limitations:** To preclude the applicability of 401 KAR 51:017:
See **Group Requirements - 2A1 Surfactants Plant.**

Compliance Demonstration Method:

See **Group Requirements - 2A1 Surfactants Plant.**

3. **Testing Requirements:** None

4. **Specific Monitoring Requirements:** None

5. **Specific Recordkeeping Requirements:**

The permittee shall keep records of the volume of sulfur dioxide and sulfur trioxide unloaded during each truck unloading at the surfactants plant.

6. **Specific Reporting Requirements:** None

7. **Specific Control Equipment Operating Conditions:**

See **2A1 SURFACTANTS - SCRUBBERS** requirements.

8. **Alternate Operating Scenarios:** None

9. **Compliance Schedule:** None

10. **Compliance Certification Requirements:** See General Condition F.7.

(11) 2A1 SURFACTANTS - SCRUBBERS:

--	(31-33)	*A-224 Sulfuric Acid Scrubber: (vented through the A-100 Caustic Tray Scrubber)	Packed bed countercurrent column 18" diameter x 12' tall 1.5" Ceramic Intalox Saddle packing Scrubbing liquid: Water or equivalent
		The following units/operations are vented to the A-224 Scrubber:	
		1. M-224	
		2. SO ₂ /SO ₃ Truck Unloading	
	(M-223)	Sulfuric Acid Solution Holding: Tank (associated with the acid scrubber)	Carbon steel lined 4000 gallon capacity
--	(31-33)	*Caustic Venturi Scrubber: (vented through the A-100 Caustic Tray Scrubber)	Cocurrent Venturi Scrubber Scrubbing liquid: Sodium Hydroxide solution or equivalent
--	(31-33)	*A-100 Caustic Tray Scrubber:	Countercurrent tray column 24" diameter x 27 ' tall
		The following units/operations are vented to the A-100 Scrubber:	15 trays
		R-100, R-101	Scrubbing liquid: Sodium Hydroxide solution or equivalent
		M-103, M-225 Unloading	
		M-202, A-224	

*SO₂ emission source

APPLICABLE REGULATIONS: None

- Operating Limitations:** None

Compliance Demonstration Method: None
- Emission Limitations:**

See Group Requirements - 2A1 Surfactants Plant.

Compliance Demonstration Method:

See Group Requirements - 2A1 Surfactants Plant.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(11) 2A1 SURFACTANTS - SCRUBBERS:** (Continued)**3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted on the scrubbers as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications, the following:

- a. A device for the continuous measurement of the liquid stream flow rates (or pressure drop) across the sulfuric acid packed bed scrubber.
- b. A device for the continuous measurement of the liquid stream flow rates (or pressure drop) across the venturi caustic scrubber, which discharges to the caustic tray scrubber.
- c. A device for the continuous measurement of the gas and liquid stream flow rates (or pressure drop) on the caustic tray scrubber.

5. Specific Recordkeeping Requirements:

- a. The permittee shall keep continuous records (on a strip chart recorder or equivalent) of the following information:
 - i. The liquid stream flow rate (or pressure drop) across the sulfuric acid packed bed scrubber.
 - ii. The liquid stream flow rate (or pressure drop) across the venturi caustic scrubber.
 - iii. The gas and liquid stream flow rates (or pressure drop) across the caustic tray scrubber.
 - iii. Caustic concentration in the scrubber feed tank.
 - iv. Sulfuric acid concentration in the acid scrubber feed tank.
- b. The permittee shall add sufficient make up caustic to the scrubber feed tank to maintain a minimum of 4% caustic while the scrubber is in operation.
- c. The permittee shall note any scrubber malfunction by noting the appearance of odors in the operating area, these observations shall be noted in the operating log book.
- d. The permittee shall add sufficient make up sulfuric acid to the sulfuric acid scrubber to maintain the acid concentration between 92 to 102%.

6. Specific Reporting Requirements:

None

7. Specific Control Equipment Operating Conditions:

All three scrubbers shall operate within ± 5 percent of the design liquid/gas ratio listed above.

8. Alternate Operating Scenarios: None**9. Compliance Schedule:** None**10. Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(11) GROUP REQUIREMENTS - 2A1 SURFACTANTS:**

(Note: The 2A1 Surfactants plant was permitted as a synthetic minor. Total emissions of sulfur dioxide are restricted to less than 40 tons per year to preclude applicability of Regulation 401 KAR 51:017)

2A1 Surfactants Plant:

This section applies to all process and fugitive sources of sulfur dioxide at the 2A1 Surfactants plant listed in the previous section. All sulfur dioxide emission sources are marked with an asterisk (*).

APPLICABLE REGULATIONS: None**1. Operating Limitations: None**

Compliance Demonstration Method: None

2. Emission Limitations: To preclude the applicability of 401 KAR 51:017:

Combined emissions of sulfur dioxide from the 2A1 Surfactants plant shall not exceed 39 tons per year (12-month rolling total).

Compliance Demonstration Method:

- a. The permittee shall maintain monthly records of the total batches and amount of sulfonated surfactant produced at the plant during each calendar month.
- b. All the affected facilities and processes required to be vented to the caustic scrubbers (see individual point listing) shall route sulfur dioxide emissions to the caustic scrubber. Operator logs shall be used to determine compliance with this requirement.
- c. The caustic scrubbers shall be operated and maintained in accordance with manufacturer's specifications. Any deviation in performance shall be interpreted as a corresponding loss in control efficiency. Operator logs shall be used to record any performance deviations.
- d. The permittee shall maintain monthly records of total sulfur dioxide emissions from the 2A1 Surfactants plant.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted on the scrubbers as required by the Division.

4. Specific Monitoring Requirements:

For specific monitoring requirements, see individual point listing.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(11) GROUP REQUIREMENTS - 2A1 SURFACTANTS: (Continued)

5. Specific Recordkeeping Requirements:

The permittee shall compile monthly records of the total (process and fugitive) sulfur dioxide emissions at the 2A1 Surfactants plant. Compliance with the annual emission limit shall be determined as a 12-month rolling total.

6. Specific Reporting Requirements:

Any consecutive 12-month period during which emissions of sulfur dioxide exceed 39 tons shall be reported to the Owensboro Regional Office. The report shall consist of the following information:

- i. The 12-month period during which emissions exceeded 39 tpy.
- ii. Calculations documenting the actual emissions during this 12-month period.

7. Specific Control Equipment Operating Conditions:

See **2A1 SURFACTANTS - SCRUBBERS** requirements.

8. Alternate Operating Scenarios:

The production of Wayfos Glycol and Phosphate Ester Blends (see December 6, 1996 registration) allowed at the 2A1 Surfactants Area does not result in emissions of sulfur dioxide. During these periods, the equipment listed herein is not subject to the sulfur dioxide standards listed herein.

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(12) POLYSOLV/GLYCOL ETHERS AREA:

REACTORS:

-- (--) Reactor R-200 (Unit #5)
 -- (--) Reactor R-210 (Unit #4)
 -- (--) Reactor R-250 (Unit #3)

DISTILLATION COLUMNS:

DC (11-200) Pressure Controller (Unit #3)	A-200 Alcohol Column
DD (11-201) L-201 Vacuum Jet:	A-201 Mono Column
DF (11-211) L-211 Vacuum Jet:	A-211 Di Finishing Column
DA (11-212) L-212 Vacuum Jet:	A-212 Tri Column
DC (11-301) Pressure Controller (Unit #5)	A-301 Alcohol Column
DE (11-210) L-210 Vacuum Jet:	A-210 Mono Column
DF (11-211) L-211 Vacuum Jet:	A-211 Di Finishing Column
DA (11-212) L-212 Vacuum Jet:	A-212 Tri Column
DC (11-250) Pressure Controller (Unit #4)	A-250 Alcohol Column
DD (L-251) L-251/253 Vacuum Jet:	A-253 Di Column
	A-255 Tri Column
	A-251 EM-DM Column
DF (11-253) L-252 Vacuum Jet:	A-252 Mono Column
DB (11-255) L-255 Vacuum Jet:	A-255 Tri Column
DA (11-203) L-200 Vacuum Jet:	A-203 Batch Column

STORAGE TANKS:

LE (13-05) Methanol Storage Tank, M-129
 LE (13-06) Methanol Storage Tank, M-200B

PIPELINE EQUIPMENT:

DH (--) Approximate Pipeline Equipment:	29	Light Liquid Valves
	871	Gas Valves
	1042	Gas Flanges
	12	Gas PSVs

DH (--) Wastewater emissions from hot wells, sewers, manholes and wastewater treatment plant basins and tanks.

APPLICABLE REGULATIONS:

None

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(12) POLYSOLV/GLYCOL ETHERS AREA:

Regulations Not Applicable:

1. All reactors listed above were constructed prior to June 29, 1990 and are exempt from Regulation 401 KAR 60:700 [40 CFR 60 Subpart RRR].
2. All distillation columns listed above were constructed prior to December 30, 1983 and are exempt from Regulation 401 KAR 59:725 [40 CFR 60 Subpart NNN].
3. All storage tanks listed above were constructed prior to July 23, 1984 and are exempt from Regulation 401 KAR 59:485 [40 CFR 60 Subpart Kb].
4. All pipeline equipment listed above was installed prior to January 5, 1981 and is exempt from Regulation 401 KAR 60:480 [40 CFR 60 Subpart VV].

1. **Operating Limitations:** None
Compliance Demonstration Method: None
2. **Emission Limitations:** None
Compliance Demonstration Method: None
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:** None
5. **Specific Recordkeeping Requirements:** None
6. **Specific Reporting Requirements:** None
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None
9. **Compliance Schedule:** None
10. **Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PROCESS VENTS:****GROUP 1 PROCESS VENTS:**

ID (21-130) A-11 Ethylene Oxide Process Scrubber
The following equipment/operations are vented to this column:

1. Ethylene Oxide transfers to storage tanks (Group 1 process vent)
2. Ethylene Oxide railcar loading operations (Group 1 process vent)
3. Propylene Oxide unloading operations (Group 1 process vent)
4. Venting of I & J Tanks (serves as back-up only)

GROUP 2 PROCESS VENTS:

BA (06-32) M-54 Knockout Drum Unit

BB (06-33) A-4 Ethylene Oxide Absorber

BC (06-34) A-6 and A-7 CO₂ Stripping Column

BG (06-41) A-307 Two-Stage Jet

APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the ethylene oxide manufacturing area.

Regulation 40 CFR 63 Subpart G applies to the process vents from the equipment listed above.

1. Operating Limitations:

The A-11 Ethylene Oxide Process Scrubber (ID) shall operate at a minimum scrubbing water flow rate of 34.0 gallons per minute (daily average value).

Compliance Demonstration Method:

The permittee shall monitor and record the scrubbing water flow rate to the A-11 Scrubber (See **4. Specific Monitoring Requirements** and **5. Specific Recordkeeping Requirements**).

2. Emission Limitations:

- a. For the A-11 Ethylene Oxide Process Scrubber (Emission Point # ID):
Pursuant to 40 CFR 63.113 (a)(2), the emissions of total organic hazardous air pollutants (HAP) in each Group 1 process vent sent to the scrubber shall be reduced by 98 weight-percent.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PROCESS VENTS:**

(Continued)

- b. For each of the Group 2 Process Vents - M-54 Knockout Drum Unit, A-4 Ethylene Oxide Absorber, A-6 and A-7 CO₂ Stripping Column, and A-307 Two-Stage Jet:
Pursuant to 40 CFR 63.113 (e), the permittee shall maintain a TRE greater than 4.0 for each Group 2 vent stream and comply with the following requirements:
 - i. Provisions for calculating TRE index in 40 CFR 63.115.
 - ii. Reporting and recordkeeping provisions in 40 CFR 63.117(b), 63.118(c), and 63.118(h).

Compliance Demonstration Method:

- a. For the A-11 Ethylene Oxide Process Scrubber:
Compliance shall be determined by measuring either organic HAP or TOC (total organic content) using the procedures described in 40 CFR 63.116(c).
- b. For each Group 2 Process Vent:
TRE shall be calculated in accordance with the procedures in 40 CFR 63.115.

3. Specific Testing Requirements:

- a. Methods and procedures for vent group determination - For the purposes of determining process vent stream flow rate, total organic HAP or TOC concentration or TRE index value, the permittee shall follow the methods and procedures listed in 40 CFR 63.115.
- b. Performance test methods and procedures to determine compliance - The permittee shall follow the methods and procedures listed in 40 CFR 63.116(c) whenever testing to demonstrate compliance with the percent reduction efficiency requirements is performed.

4. Specific Monitoring Requirements:

- a. For the A-11 Ethylene Oxide Process Scrubber:
The permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:
 - i. A flow indicator equipped with a continuous recorder for the scrubbing water flow to the scrubber. The indicator shall be located at the scrubber influent. Flow shall be monitored at least once every 15 minutes during periods of operation.
 - ii. A flow indicator equipped with a continuous recorder for the vent stream flow to the scrubber. The indicator shall be located at the scrubber inlet. Flow shall be monitored at least once every 15 minutes during periods of operation.
- b. For each of the Group 2 Process Vents:
In accordance with the provisions of 40 CFR 63.113 (e), the permittee is not subject to any monitoring requirements for Group 2 process vents.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PROCESS VENTS:**

(Continued)

5. Specific Recordkeeping Requirements:

- a. For the A-11 Ethylene Oxide Process Scrubber, the permittee shall maintain up-to-date, readily accessible, continuous records of the following information:
 - i. Scrubbing water flow to the A-11 Scrubber.
 - ii. Total vent stream flow to the A-11 Scrubber.
 - iii. Records of the daily average value for the scrubbing water flow and the total vent stream flow for each operating day. The provisions of Section 40 CFR 63.118 (a)(2) shall be followed for calculating the daily average values.
 - iv. The times and durations of all periods when any of the vent streams are diverted from the scrubber or the vent stream monitor is not operating. The records may be kept by computer system or strip chart recorder.
- b. For each Group 2 Process Vent:
 - i. Pursuant to 40 CFR 63.118 (b), the permittee shall maintain records of the measurements, engineering assessments, and calculations performed to determine the TRE index value of each vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments.
 - ii. Pursuant to 40 CFR 63.118 (c), the permittee shall keep up-to-date, readily accessible records of:
 - [A] Any process change as defined in 40 CFR 63.115 (e); and
 - [B] Any recalculation of the TRE index value pursuant to 40 CFR 63.115 (e).

6. Specific Reporting Requirements:

- a. For the A-11 Ethylene Oxide Process Scrubber, pursuant to 40 CFR 63.118 (f), the permittee shall submit to the Division, Periodic Reports of the following recorded information according to the schedule in 40 CFR 63.152:
 - i. Reports of daily average values of the scrubbing water flow rate for all operating days when the daily average value was less than 34.0 gallons per minute.
 - ii. Reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data as defined in 40 CFR 63.152 (c)(2)(ii)(A).
 - iii. Reports of the times and durations of all periods when any of the vent streams were diverted from the A-11 Scrubber.The reports shall be submitted on a semi-annual basis. The first periodic report shall cover the first 6 months after the initial compliance date. Each subsequent periodic report shall cover the 6 month period following the preceding period.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(13) ETHYLENE OXIDE - PROCESS VENTS:

(Continued)

b. For each Group 2 Process Vent:

- i. Whenever a process change, as defined in 40 CFR 63.115(e), causes a Group 2 process vent to become a Group 1 process vent, the permittee shall submit a report within 180 days after the process change. The report shall include the information required by 40 CFR 63.118(g) (1)-(3).
- ii. Whenever a process change, as defined in 40 CFR 63.115(e), causes a Group 2 process vent with a TRE index greater than 4.0 to become a Group 2 process vent with a TRE index less than 4.0, the permittee shall submit, to the Division's Owensboro Regional Office, a report within 180 days after the process change. The report shall include the information required by 40 CFR 63.118(h) (1)-(3).

7. Specific Control Equipment Operating Conditions:

The A-11 Ethylene Oxide Process Scrubber (Emission Point #ID) shall be operated at a minimum scrubbing water flow rate of 34.0 gallons per minute (daily average value).

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(13) ETHYLENE OXIDE - TRANSFER OPERATIONS:

ID (TR-01) Ethylene Oxide Railcar Loading: Vapor balanced

APPLICABLE REGULATIONS:

None

Regulation Not Applicable:

Pursuant to 40 CFR 63.100 (f)(8), loading racks, loading arms, or loading hoses that are vapor balanced during all loading operations are excluded from the definition of source. Therefore, the ethylene oxide loading operations are exempt from Regulations 40 CFR 63 Subpart F and G.

1. **Operating Limitations:** None
Compliance Demonstration Method: None
2. **Emission Limitations:** None
Compliance Demonstration Method: None
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:** None
5. **Specific Recordkeeping Requirements:** None
6. **Specific Reporting Requirements:** None
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None
9. **Compliance Schedule:** None
10. **Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - STORAGE VESSELS:**

- (21-130) Ethylene Oxide Storage Tank, M1A Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1B Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1C Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1D Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1E Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1F Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1G Pressurized tank, 72 m³ (20,000 gal)
- (21-130) Ethylene Oxide Storage Tank, M1H Pressurized tank, 72 m³ (20,000 gal)

Notes:

All vessels are closed dome loaded and operate under a pressure greater than 204.9 kPa, with excess pressure vents going to the A-11 scrubber.

APPLICABLE REGULATIONS:

None

Regulations Not Applicable:

Pursuant to the definition of *Storage Vessel* in 40 CFR 63.101(b), pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere are excluded from the definition of storage vessel. Therefore, the pressurized Ethylene Oxide Storage Tanks are exempt from Regulations 40 CFR 63 Subparts F and G.

1. **Operating Limitations:** None
Compliance Demonstration Method: None
2. **Emission Limitations:** None
Compliance Demonstration Method: None
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:** None
5. **Specific Recordkeeping Requirements:** None
6. **Specific Reporting Requirements:** None
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None
9. **Compliance Schedule:** None
10. **Compliance Certification Requirements:** See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - WASTEWATER STREAMS:**

--	(--)	M-4 Blowdown	(Group 2 wastewater stream)
--	(06-05)	M-5 Bottoms, knockout for recycle compressor	(Group 2 wastewater stream)
--	(--)	A-6 Overhead	(Group 2 wastewater stream)
--	(--)	A-7 Vent Scrubber	(Group 2 wastewater stream)
--	(--)	A-7 Exchanger Bottoms	(Group 2 wastewater stream)
--	(--)	T-2 Bottoms	(Group 2 wastewater stream)
--	(06-52)	A-52 Bottoms	(Group 2 wastewater stream)
--	(06-51)	A-51 Bottoms	(Group 2 wastewater stream)
--	(--)	M-54 Bottoms Blowdown	(Group 2 wastewater stream)
--	(--)	A-302 Hotwell	(Group 2 wastewater stream)
--	(--)	EO Compressor Blowdown	(Group 2 wastewater stream)
--	(--)	Sampler Analyzer Knockout Pot	(Group 2 wastewater stream)
--	(--)	Pump Seal Flush, 16 pumps	(Group 2 wastewater stream)
--	(--)	A-11 Scrubber Effluent	(Group 2 wastewater stream)
--	(--)	Once through Cooling Water	(Group 2 wastewater stream)
--	(--)	EO Storage Tank Coolers	(Group 2 wastewater stream)
--	(--)	P-3A Cooler	(Group 2 wastewater stream)
--	(--)	P-3B Cooler	(Group 2 wastewater stream)
--	(--)	A-51 Bottoms Sample Cooler	(Group 2 wastewater stream)
--	(--)	A-6 Bottoms Sample Cooler	(Group 2 wastewater stream)
--	(--)	A-54 Condensate Cooler	(Group 2 wastewater stream)
--	(--)	Oil Drum Dike Stormwater	(Group 2 wastewater stream)

Note: There are no wastewater tanks, surface impoundments, containers, individual drain systems, oil-water separators, treatment processes, or control devices that handle, transfer or store any Group 1 wastewater streams in the Ethylene Oxide area.

APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the ethylene oxide manufacturing area.

Regulation 40 CFR 63 Subpart G applies to the wastewater streams listed above.

1. **Operating Limitations:** None
Compliance Demonstration Method: None

2. **Emission Limitations:** None
The permittee has elected to comply with the provisions of 40 CFR 63.132 (b)(2). Therefore, pursuant to 40 CFR 63.132 (i), the permittee shall comply with the recordkeeping and reporting requirements of 63.146 and 63.147 only.

Compliance Demonstration Method: None

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(13) ETHYLENE OXIDE - WASTEWATER STREAMS: (Continued)

3. Testing Requirements:

The permittee shall follow the test methods and procedures described in 40 CFR 63.144 for determining applicability and Group 1/Group 2 determinations as required.

4. Specific Monitoring Requirements: None

5. Specific Recordkeeping Requirements:

- a. The permittee shall keep records of all reports submitted in accordance with 40 CFR 63.146 including the Implementation Plan and Notification of Compliance Status [40 CFR 63.147 (b)].
- b. If the permittee uses process knowledge to determine the VOHAP concentration of a wastewater stream and/or uses process knowledge to determine the annual average flow rate, readily accessible documentation of how the process knowledge was used in these determinations shall be kept [40 CFR 63.147 (g)].

6. Specific Reporting Requirements: None

7. Specific Control Equipment Operating Conditions: None

8. Alternate Operating Scenarios: None

9. Compliance Schedule: None

10. Compliance Certification Requirements: See General Condition F.7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PIPELINE EQUIPMENT:**

--	(--) Ethylene Oxide Area Pipeline Equipment:	12	Light Liquid Pumps
		694	Gas Valves
		776	Gas Flanges
		44	Gas Open Ended Valves
		19	Gas PSVs
--	(--) Ethylene Oxide Storage Pipeline Equipment:	4	Light Liquid Pumps
		411	Liquid Valves
		245	Liquid Flanges

BI (06-40) Wastewater emissions from hot wells, sewers, manholes, and wastewater treatment plant basins and tanks.

Note: The pipeline equipment count listed above reflects an accurate count of the equipment as of the date of issuance of this permit. The permittee may add or remove pipeline equipment from the Ethylene Oxide area without a permit revision as long as the equipment continues to comply with the requirements listed below.

APPLICABLE REGULATIONS:

Regulation 40 CFR 63 Subpart F applies to the ethylene oxide area.

Regulation 40 CFR 63 Subpart H applies to the pipeline equipment listed above.

1. Operating Limitations:

For the pipeline equipment in HAP service, the permittee shall maintain a leak detection and repair (LDAR) program containing the following elements:

- a. Each piece of pipeline equipment within the Ethylene Oxide area shall be identified such that it can be distinguished readily from equipment that is not subject to 40 CFR 63 Subpart H [40 CFR 63.162 (c)].
- b. When a leak is detected as specified in 40 CFR 63.163 and 63.164; 63.168 and 63.169; and 63.172 through 63.174, the procedures described in 40 CFR 63.162 (f) (1) - (3) shall be followed to identify the leaking piece.
- c. Specific standards for each type of pipeline equipment described under **2. Emission Limitations** below.

Compliance Demonstration Method:

Compliance with 40 CFR 63 Subpart H shall be determined by review of the records required by 63.181 and the reports required by 63.182, review of performance test results, and by inspections [40 CFR 63.162 (a)].

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PIPELINE EQUIPMENT:** (Continued)**2. Emission Limitations:**

The permittee shall incorporate the following elements in the required leak detection and repair (LDAR) program. If any of the equipment qualifies for the specific exemptions available in 40 CFR 63 Subpart H, the permittee shall maintain records of the reason(s) why the equipment is exempt.

a. Standards: Pumps in light liquid service [40 CFR 63.163]:

- | | |
|-----------------------|---|
| 40 CFR 63.163 (a) | Implementation and compliance provisions |
| 40 CFR 63.163 (b) | Monitoring requirements, leak detection levels, frequency of monitoring |
| 40 CFR 63.163 (c) | Repair procedures and time frames |
| 40 CFR 63.163 (d) | Calculation procedures to determine percent leaking pumps and requirements for quality improvement programs |
| 40 CFR 63.163 (e)-(j) | Exemptions for specific types of pumps |

b. Standards: Pressure relief devices in gas/vapor service [40 CFR 63.165]:

- | | |
|-----------------------|--|
| 40 CFR 63.165 (a) | Operational requirements |
| 40 CFR 63.165 (b) | Pressure release procedures |
| 40 CFR 63.165 (c)-(d) | Exemptions for specific types of pressure relief devices |

c. Standards: Open-ended valves or lines [40 CFR 63.167]:

- | | |
|-----------------------|---|
| 40 CFR 63.167 (a)-(c) | Operational requirements |
| 40 CFR 63.167 (d)-(e) | Exemptions for specific types of valves |

d. Standards: Valves in gas/vapor service and in light liquid service [40 CFR 63.168]:

- | | |
|-----------------------|--|
| 40 CFR 63.168 (a) | Operational requirements |
| 40 CFR 63.168 (b)-(d) | Monitoring requirements and intervals |
| 40 CFR 63.168 (e) | Calculation procedures to determine percent leaking valves |
| 40 CFR 63.168 (f) | Leak repair time frames |
| 40 CFR 63.168 (g) | First attempt repair procedures |
| 40 CFR 63.168 (h)-(i) | Exemptions for unsafe-to-monitor and difficult-to-monitor valves |

e. Standards: Surge control vessels and bottoms receivers [40 CFR 63.170]:

- | | |
|---------------|--------------------------|
| 40 CFR 63.170 | Operational requirements |
|---------------|--------------------------|

f. Standards: Delay of repair [40 CFR 63.171]:

- | | |
|---------------|--------------------------------|
| 40 CFR 63.171 | Allowances for delay of repair |
|---------------|--------------------------------|

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PIPELINE EQUIPMENT:**

(Continued)

- g. Standards: Connectors in gas/vapor service and in light liquid service [40 CFR 63.174]:
- 40 CFR 63.174 (a) Operational requirements
 - 40 CFR 63.174 (b) Monitoring requirements and intervals
 - 40 CFR 63.174 (c) Procedures for open connectors or connectors with broken seals
 - 40 CFR 63.174 (d) Leak repair time frames
 - 40 CFR 63.174 (e) Monitoring frequency for repaired connectors
 - 40 CFR 63.174 (f)-(h) Exemptions for unsafe-to-monitor, unsafe-to-repair, inaccessible, or ceramic connectors
 - 40 CFR 63.174 (i) Calculation procedures to determine percent leaking connectors
 - 40 CFR 63.174 (j) Optional credit for removed connectors
- h. Quality improvement program for valves [40 CFR 63.175]:
- Pursuant to 40 CFR 63.168 (d)(1)(ii), in Phase III, the permittee may elect to implement the following quality improvement programs if the percent of leaking valves is equal to or exceeds 2 percent:
- 40 CFR 63.175 (a) Quality improvement program alternatives
 - 40 CFR 63.175 (b) Criteria for ending quality improvement programs
 - 40 CFR 63.175 (c) Alternatives following achievement of less than 2 percent leaking valves target
 - 40 CFR 63.175 (d) Quality improvement program to demonstrate further progress
 - 40 CFR 63.175 (e) Quality improvement program of technology review and improvement
- i. Quality improvement program for pumps [40 CFR 63.176]:
- Pursuant to 40 CFR 63.163 (d)(2), if, in Phase III, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in the ethylene oxide area or three pumps in the ethylene oxide area leak, the permittee shall implement the following quality improvement programs for pumps:
- 40 CFR 63.176 (a) Applicability criteria
 - 40 CFR 63.176 (b) Criteria for ending the quality improvement program
 - 40 CFR 63.176 (c) Criteria for resumption of the quality improvement program
 - 40 CFR 63.176 (d) Quality improvement program elements

Compliance Demonstration Method:

A copy of the leak detection and repair (LDAR) program meeting the criteria listed above shall be kept available at a readily accessible location for inspection.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**(13) ETHYLENE OXIDE - PIPELINE EQUIPMENT:**

(Continued)

3. Testing Requirements:

The permittee shall comply with the following test methods, schedules and procedures requirements [40 CFR 63.180 (a)]:

- 40 CFR 63.180 (b) Monitoring procedures, test methods and calibration procedures
- 40 CFR 63.180 (c) Leak detection monitoring procedures
- 40 CFR 63.180 (d) Procedures for determining organic HAP service applicability

4. Specific Monitoring Requirements:

See 3. Testing Requirements above.

5. Specific Recordkeeping Requirements: [40 CFR 63.181]

- a. The permittee may comply with the recordkeeping requirements for the Ethylene Oxide and Propylene Glycol areas in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g. quarterly monitoring, quality improvement) for each type of equipment. All records required by 40 CFR 63.181 shall be maintained in a manner that can be readily accessed at the plant site.
- b. The permittee shall maintain all records pertaining to the pipeline equipment required by 40 CFR 63.181 (b).
- c. For visual inspections, the permittee shall document that the inspection was conducted and the date of the inspection. These records shall be kept for a period of five years [40 CFR 63.181 (c)].
- d. When a leak is detected, the information specified in 40 CFR 63.181 (d) shall be recorded and kept for five years.
- e. If the permittee implements any of the quality improvement programs required by 40 CFR 63.175 and 63.176, the records specified in 40 CFR 63.181 (h)(1)-(9) shall be maintained for a period of five years.

6. Specific Reporting Requirements:

Pursuant to 40 CFR 63.182 (a)(3), Periodic Reports, the permittee shall submit to the Division's Owensboro Regional Office, semiannually, the information required by 40 CFR 63.182 (d)(2). The first periodic report shall cover the first 6 months after the compliance date specified in 40 CFR 63.100(k)(3) of Subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.

7. Specific Control Equipment Operating Conditions: None**8. Alternate Operating Scenarios: None****9. Compliance Schedule: None****10. Compliance Certification Requirements: See General Condition F.7.**

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to Regulation 401 KAR 50:035, Section 5(4).

a. Polymer Polyols:

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
V-56-8	Monomer Mix Tank	5,000 Gals
R-56-3&4	Strip Vessels	4,000 Gals, ea.
	Filter Feed Tank	8,000 Gals
V-38	Poly Tank	25,000 Gals
M1&2	Polymer Polyol Tanks	28,000 Gals, ea.

b. Propylene Glycols:

(M-6A)	Propylene Glycol Receiver	331,000 Gal
(M-6I)	Propylene Glycol Receiver	28,000 Gal
(M-10A)	Propylene Glycol Product	1,030,000 Gal
(M-6G)	Dipropylene Glycol Tank	331,000 Gal
(M-41)	Dipropylene Glycol Tank	22,500 Gal
(M-61BF)	Tripropylene Glycol Tank	2,700 Gal
M-401	PRG PF930 Sweetwater Tank	7,050 Gals
M-402	Recycle Water Tank	
M-403	Feed Accumulator Tank	
M-404	Overhead Accumulator	
M-405	Inter-Product Accumulator	
M-408	Crude DPG Storage	16,000 Gals
M-421	Glycol Ether Rerun Tank	
M-258B	Glycol Rerun Tank	1,700 Gals
M-409	Propylene Glycol Side Tank	2,000 Gals
M-407	Propylene Glycol Check Tank	5,000 Gals
M-406	Propylene Glycol Check Tank	5,000 Gals
M-110A	Work Tank	10,000 Gals
M-88	DPG Check Tank	1,700 Gals
M-20E	DPG Check Tank	
M-207	A202 Reflux Drum	
(TR-02)	Propylene Glycol Railcar Loading	
(TR-03)	Propylene Glycol Railcar Loading	
(TR-04)	Propylene Glycol Railcar Loading	
(TR-05)	Propylene Glycol Railcar Loading	
(TR-06)	Propylene Glycol Railcar Loading	
(TR-07)	Propylene Glycol Railcar Loading	
(TR-08)	Propylene Glycol Railcar Loading	
(TR-09)	Propylene Glycol Railcar Loading	
(TR-10)	Propylene Glycol Railcar Loading	
(TR-11)	Propylene Glycol Railcar Loading	
(TR-12)	Propylene Glycol Railcar Loading	

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)c. Utilities:

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M-400	Non-hazardous Waste Storage Tank	
NA	Treatment Chemical Feed Tanks less than	500 gallons
NA	Potable Water System	
NA	Deionized Water Treatment System	
NA	Emergency Diesel Generators	
M-400	Non-hazardous Waste Storage Tank	
NA	Treatment Chemical Feed Tanks (various)	< 500 gal ea.
NA	Potable Water System	
NA	Deionized Water Treatment System	
NA	Emergency Diesel Generators (various)	550 gal ea.
M-105	Idle	40,000 gal
M-501	Gasoline	4,000 gal
M-502	Diesel Fuel	4,000 gal
M-503	Used Oil	560 gal
Portable	Diesel Oil	1,000 gal
Portable	Construction Diesel	550 gal
Portable	Construction Gasoline	550 gal
Portable	Construction Gasoline	550 gal

d. Polychemicals Process Tanks:

<u>Process/Liquid Stored</u>	<u>Tank #</u>	<u>Capacity</u>	<u>Process/Liquid Stored</u>	<u>Tank #</u>	<u>Capacity</u>
Strip Tank	M-1		Polyol	M-93M	15804
Stripper Hold Tank	M-11A	10566	Precoat Tank	M-96N	
Stripper Hold Tank	M-11B	10566	Filter Feed Tank	M-97B	
Stripper Hold Tank	M-18	23700	Filter Feed Tank	M-97G	
Stripper Feed Tank	M-26	23700	Filter Feed Tank	M-97H	
Stripper Hold tank	M-27	23700	Filter Feed Tank	M-97I	
Stripper Hold Tank	M-28	23700	Filter Feed Tank	M-97J	
Stripper Feed Tank	M-31	23700	Filter Feed Tank	M-97K	13800
Filter Feed Tank	M-47	12750	Filter Feed Tank	M-97L	
Filter Hold Tank	M-49	12750	Filter Feed Tank	M-97N	
Polyol	M-64N	110100	Filter Feed Tank	M-97P	
Stripper Feed Tank	M-82A	23430	Filter Feed Tank	M-97R	
Stripper Feed Tank	M-82B	23430	Filter Feed Tank	M-97T	
Stripper Hold Tank	M-83A	23430	Filter Hold Tank	M-98B	

Process/Liquid Stored	Tank #	Capacity	Process/Liquid Stored	Tank #	Capacity
Stripper Hold Tank	M-83B	23430	Filter Hold Tank	M-98G	
Filter Feed Tank	M-85		Filter Hold Tank	M-98H	
DEG	M-90B		Filter Hold Tank	M-98I	
DEA Weigh Tank	M-90D		Filter Hold Tank	M-98J	
Weigh Tank	M-90E		Filter Hold Tank	M-98K	
Precursor Strip	M-90G		Filter Hold Tank	M-98L	
Polyol	M-90I		Filter Hold Tank	M-98M	
DEA	M-90R		Filter Feed Tank	M-98N	
Acetic Acid	M-91C	1818	Filter Feed Tank	M-98P	
Polyol	M-91D	3008	Filter Hold Tank	M-98R	
Weigh Tank	M-91E		Filter Hold Tank	M-98T	
Phos. Acid	M-91G	1818	Polyol	M-99H	24096
Receiver	M-91SA	250	Sugar Hopper	M-100A	
Receiver	M-91SB		Filter Hold Tank	M-115	5194
Blend Tank	M-93A	5201	Polyol Decant	M-190	5385
Condemned	M-93B		Recovered Polyol	M-193	5385
Treatment Tank	M-93G		Clay Recovery	M-194	
Treatment Tank	M-93J		Polyol	M-99I	4100
Nonyl Phenol	M-24	23700	Castor Oil	M-132B	14169
Alfol-610	M-25A	23700	IPA	M-242	
Liquid KOH	M-25E	12750	PrG	M-252A	
Glycerine	M-55	23700	50% NaOH	M-256	6300
Polyol	M-93G	4320	Epoxy Decane	M-257	14375
Polyol	M-99G	6100	Acetic Acid	M-90C	
Polyol	92A	2000	Polyol	92J	4000
Polyol	92B	2000	Polyol	92K	6000
Polyol	92C	3500	Polyol	92L	10000
Polyol	92D	3500	Polyol	93L	10000
Polyol	92E	3500	Polyol	92M	6000
Polyol	92F	2500	Polyol	92N	23700
Polyol	92G	4000	Polyol	93N	23700
Polyol	92H	4000	Polyol	92R	7500

Process/Liquid Stored	Tank #	Capacity	Process/Liquid Stored	Tank #	Capacity
Polyol	93H	6000	Polyol	93R	7500
Polyol	92I	4000	HQEE	92S	5000
Polyol	93I	4000	Polyol	93T	4000
Process	M-11A	10566	Polyol	M-66D	48372
Process	M-11B	10566	Polyol	M-66E	48272
Polyol	M-11C	10566	Polyol	M-66F	48372
Polyol	M-11D	10566	Polyol	M-66H	48372
Polyol	M-11E	11742	Polyol	M-66J	48372
Polyol	M-11F	11742	Polyol	M-66K	48372
Polyol	M-11G	23118	Polyol	M-67B	23430
Polyol	M-11H	23118	Polyol	M-67C	23430
Polyol	M-17A	10566	Polyol	M-67D	48372
Polyol	M-17B	10566	Polyol	M-67F	48372
Polyol	M-17C	10566	Polyol	M-67G	48372
Polyol	M-17D	10566	Polyol	M-67J	23430
Process	M-18	23700	Polyol	M-69A	22200
Polyol	M-18A	23700	Polyol	M-70	24048
Polyol	M-19	23700	Polyol	M-73	4457
Nonyl Phenol	M-24	23700	Polyol	M-75	31100
Polyol	M-25	23700	Polyol	M-76	31100
Alfol-610	M-25A	23700	Process	M-82A	23430
Polyol	M-25B	14170	Process	M-82B	23430
Polyol	M-25C	23700	Process	M-83A	23430
Polyol	M-25D	12750	Process	M-83B	23430
Liquid KOH	M-25E	12750	Polyol	M-84	24048
Process	M-26	23700	Acetic Acid	M-91C	1818
Process	M-27	23700	Polyol	M-91D	3008
Process	M-28	23700	Phos. Acid	M-91G	1818
Polyol	M-29W	110100	Blend Tank	M-93A	5201
Polyol	M-29A	110100	Polyol	M-93C	4136
Polyol	M-30	11740	Polyol	M-93E	4136
Process	M-31	23700	Polyol	M-93F	4320

Process/Liquid Stored	Tank #	Capacity	Process/Liquid Stored	Tank #	Capacity
Polyol	M-32	110100	Polyol	M-93M	15804
Polyol	M-33	110100	Process	M-97K	13800
Polyol	M-34	110100	Process	M-98K	12750
Polyol	M-35	23700	Polyol	M-99G	6100
Polyol	M-36	23700	Polyol	M-99H	24096
Polyol	M-37	23700	Polyol	M-99I	4100
Blend Tank	M-40	11894	Polyol	M-99M	24096
Polyol	M-42	6138	Rigid Process	M-102P	24048
Polyol	M-43	25100	Polyol	M-110B	10566
Polyol	M-44	25100	RCS-BB	M-110C	23430
Polyol	M-45	25100	Polyol	M-111A	48372
Polyol	M-46	25100	Polyol	M-111B	48372
Polyol	M-47	12750	Process	M-115	5194
Polyol	M-48	12750	Polyol	M-130A	23430
Polyol	M-49	12750	Polyol	M-130B	23430
Polyol	M-50	26441	Polyol	M-131	24048
Polyol	M-51W	12750	Polyol	M-132A	14169
Polyol	M-52	23700	Castor Oil	M-132B	14169
Polyol	M-53	12750	Polyol	M-133	5850
Glycerine	M-55	23700	Blend	M-134	5850
Polyol	M-56	23700	Polyol Decan.	M-190	5385
Polyol	M-57	49446	Polyol Rec.	M-193	5385
Polyol	M-58	10077	Polyol	M-252	6624
Polyol	M-60	23430	Polyol	M-252B	14700
Polyol	M-61	110100	Polyol	M-253	12582
Polyol	M-62	110100	Polyol	M-254A	10000
Polyol	M-63	110100	Polyol	M-254B	10000
Polyol	M-64N	110100	Polyol	M-90	170000
Polyol	M-66A	48372	Polyol	M-90A	170000
Polyol	M-66B	22045	Polyol	M-90B	170000
Polyol	M-66C	48372	Polyol	M-51W	12750
Polyol	M-66J	48372	Polyol	M-252B	14700

Process/Liquid Stored	Tank #	Capacity	Process/Liquid Stored	Tank #	Capacity
Polyol	M-67J	23430			
Polyol	M-69A	22200	Liquid KOH	M-25E	12750
Polyol	M-99I	4100	Nonyl Phenol	M-24	23700
Polyol	M-66C	48372	Polyol	M-131	24048
Polyol	M-44	25100	Polyol	M-56	23700
Polyol	M-52	23700	Polyol	M-30	11740
Polyol	M-66K	48372	Polyol	M-110B	10566
Polyol	M-66H	48372	Polyol	M-50	26441
Polyol	M-42	6138	Polyol	M-11E	11742
Polyol	M-33	110100	Polyol	M-11H	23118
Polyol	M-36	23700	Polyol	M-11C	10566
Polyol	M-57	49446	Polyol	M-11D	10566
Polyol	M-60	23430	Polyol	M-11G	23118
Polyol	M-34	110100	Phos. Acid	M-91G	1818
Polyol	M-37	23700	Polyol Decan.	M-190	5385
Polyol	M-35	23700	Polyol Rec.	M-193	5385
Polyol	M-29A	110100	Process	M-115	5194
Polyol	M-99H	24096	Process	M-11A	10566
Polyol	M-29W	110100	Process	M-11B	10566
Polyol	M-62	110100	Process	M-18	23700
Polyol	M-90A	170000	Process	M-26	23700
Polyol	M-90B	170000	Process	M-27	23700
Polyol	M-32	110100	Process	M-28	23700
Polyol	M-90	170000	Process	M-31	23700
Polyol	M-64N	110100	Process	M-82A	23430
Polyol	M-93M	15804	Process	M-82B	23430
Polyol	M-130A	23430	Process	M-83A	23430
Polyol	M-67C	23430	Process	M-83B	23430
Polyol	M-67B	23430	Process	M-97K	13800
Polyol	M-66B	22045	Process	M-98K	12750
Polyol	M-70	24048	PT Hold Tank	M-49	12750
Polyol	M-133	5850	PT Treatment	M-47	12750

Process/Liquid Stored	Tank #	Capacity	Process/Liquid Stored	Tank #	Capacity
Polyol	M-66D	48372	Polyol	M-18A	23700
Polyol	M-66E	48372	Polyol	M-93F	4320
Polyol	M-111A	48372	Polyol	M-19	23700
Polyol	M-111B	48372	Polyol	M-66A	48372
Polyol	M-63	110100	Polyol	M-110C	23430
Polyol	M-67F	48372	Rigid Process	M-102P	24048
Polyol	M-76	31100	Polyol	M-48	12750
Polyol	M-43	25100	Polyol	M-53	12750
Polyol	M-61	110100	Polyol	M-46	25100
Polyol	M-67G	48372	Polyol	M-11F	11742
Polyol	M-84	24048	Polyol	M-99M	24096
Polyol	M-66F	48372	Polyol	M-25D	12750
Polyol	M-67D	48372	Polyol	M-25	23700
Polyol	M-75	31100	Polyol	M-25C	23700
Acetic Acid	M-91C	1818	Polyol	M-58	10077
Alfol 610	M-25A	23700	Polyol	M-254A	10000
Polyol	M-17A	10566	Polyol	M-254B	10000
Polyol	M-17C	10566	Polyol	M-93E	4136
Polyol	M-17D	10566	Polyol	M-93C	4136
Blend	M-134	5850	Polyol	M-73	4457
Blend - RCS-4	M-252	6624	Polyol	M-17B	10566
Blend Tank	M-40	11894	Polyol	M-253	12582
Blend Tank	M-93A	5201	Polyol	M-45	25100
Castor Oil	M-132B	14169	Polyol	M-132A	14169
Polyol	M-130B	23430	Polyol	M-91D	3008
Flushes	M-25B	14170	Polyol	M-99G	6100
Glycerine	M-55	23700			

e. LHC Area Tanks:

- i. Thirty-four Pressurized Railcar Loading and Unloading Stations
- ii. Miscellaneous Drum Transfer Operations
- ii. Storage Tanks;

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)e. LHC Area Tanks: (Continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M-133A	Propylene Storage Tank	60,000 Gals (Pressurized Tank)
M-133 B	Propylene Storage Tank	60,000 Gals (Pressurized Tank)
M-30	Ispar Storage Tank	28,000 Gals (Fixed)
M-116 A	Lube Oil Storage Tank	7,000 Gals (Fixed)
M-116 B	Lube Oil Storage Tank	7,000 Gals (Fixed)
M-101 A	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 B	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 C	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 D	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 E	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 F	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 G	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 H	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 I	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 J	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 K	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 L	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 M	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 N	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 O	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-101 P	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-114	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-124 A	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-124 B	Propane Storage Tank	60,000 Gals (Pressurized Tank)
M-111	Ethane Storage Tank	(Pressurized Tank)
M-110 A	Ethylene Storage Tank	8,500 Gals (Pressurized Tank)
M-110 B	Ethylene Storage	8,500 Gals (Pressurized Tank)
M-110 C	Ethylene Storage Tank	28,000 Gals (Pressurized Tank)
M-110 D	Ethylene Storage Tank	42,670 Gals (Pressurized Tank)
M-104	Residue Gas Storage Tank	(Pressurized Tank)
M-128	Waste Oil Tank	12,000 Gals (Vented to M-1 B)
M-128 A	Waste Oil Tank	500 Gals (Idle)
M-9	Heavy Oil Tank	(Vented to M-128)
M-102 A	Butane Storage Tank	60,000 Gals (Idle)
M-102 B	Butane Storage Tank	60,000 Gals (Idle)
M-102 C	Butane Storage Tank	60,000 Gals (Idle)
M-102 D	Butane Storage Tank	60,000 Gals (Idle)
M-102 E	Butane Storage Tank	60,000 Gals (Idle)
M-102 F	Butane Storage Tank	60,000 Gals (Idle)
M-102 G	Butane Storage Tank	60,000 Gals (Idle)
M-108	Overhead Receiver	
M-111	Ethane Recycle Surge Drums	9,000 Gals
M-125	Furnace Feed Vapor Surge Tank	3,500 Gals

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)e. LHC Area Tanks: (Continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>	
M-608	Fuel Oil	2,000 Gals	(Idle)
M-131	Flare KO Drum	3,000 Gals	
M-61	Fuel Oil Tank		
M-132	Flare KO Drum		
M-51	Flare Header Seal Reservoir	10,000 Gals	
M-125 A	Isobutane Storage Pressure		(Idle)
M-125 B	Isobutane Storage Pressure		(Idle)
M-125 C	Isobutane Storage Pressure		(Idle)
M-118	Jacket Water Tank	6,000 Gals	
M-113 A	Propane Butane Blend Tank	60,000 Gals	
M-113 B	Propane Butane Blend Tank	60,000 Gals	
M-113 C	Propane Butane Blend Tank	60,000 Gals	
M-114	Propane Surge Drum		
M-124 A	Propane Surge Drum	10,200 Gals	
M-124 B	Propane Surge Drum	24,390 Gals	
M-104 R	Residue Gas Storage Tank		
M-104	Ethyl Mercaptan Storage		(Idle)

f. LHC Area Purification Columns:

A-1	Propylene Recovery Tower		
A-2	Depropanizer Tower		
A-3	Benzene Removal Tower		
A-4	Propylene Recovery Tower		
A-106	MEA Contactor Tower		(Idle)
A-107	MEA Still		(Idle)
A-103	Dethanizer Tower		
A-102	Demethanizer Tower		
A-105	Ethylene Absorber Column		
A-104	Ethylene Tower		
A-104A	Ethylene Tower		

g. 2A1 Surfactants Area:

M-203	18% Caustic Neutralization Tank	10,000 Gals
M-204	Crude BDPO or ADPO	15,000 Gals
M-205	BDPO	15,000 Gals
M-206	ADPO or BDPO	15,000 Gals
M-207	Recycle BDPO	6,000 Gals
M-208	Recycle ADPO	6,000 Gals
M-209	ADPO	6,000 Gals
M-226	Propylene Tetramer	15,000 Gals

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)g. 2A1 Surfactants Area:

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M-227	Dodecene	15,000 Gals
M-228	DPO	15,000 Gals
M-229	50% Caustic	12,000 Gals
M-223	Sulfuric Acid	4,000 Gals
R-100	Alkylation Vessel	4,000 Gals
R-101	Sulfonation Vessel	4,000 Gals
M-100	Decant Tank	500 Gals
M-105	WFE Bottoms Tank	
M-225	Chlorosulfonic Acid	(Idle)
M-108	Cooling Water Tank for R-101	12,000 Gals
M-109	Glycol Tank	750 Gals
M-107	Cooling Water Tank for R-100	12,000 Gals
M-103	Overhead Condenser Receiver	600 Gals
M-1	Nitrogen Receiver	240 Gals

h. PolySolv/Glycol Ethers Area:

M-210	Batch Kettle	
M-212	Triproduct Tanks	
M-13 A/B	Dipproduct Tanks	
M-209 A	Batch Column Feed Tank	
M-20 D		16,300 Gals
M-20 C		16,300 Gals
M-209 B,C,D,E		16,300 Gals
M-1	Glycol Ether Bottoms Tank	
M-200 BE	Hold Tank	
M-18	Batch Column Kettle	
M-34 A/B	Ethylene Glycol Receivers	
M-119 A	Poly Solv Storage	25,000s
M-8	TE Storage	
M-304 A/B	A-212 Bottoms Tank	
M-100B	Glycol Ether	420,000 Gals
M-56BF	Glycol Ether	25,200 Gals
M-235A	Glycol Ether	22,500 Gals
M-7	Glycol Ether	158,800 Gals
M-23	Glycol Ether	22,500 Gals
M-2B	Glycol Ether	88,300 Gals
M-21	Glycol Ether	22,500 Gals
M-4	Glycol Ether	22,500 Gals
M-51	Glycol Ether	77,800 Gals
M-64	Glycol Ether	22,500 Gals
M-67	Glycol Ether	31,000 Gals

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)h. PolySolv/Glycol Ethers Area: (continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M-6D	Glycol Ether	331,000 Gals
M-70E	Glycol Ether	168,400 Gals
M-14	Glycol Ether	22,500 Gals
M-3	Glycol Ether	22,500 Gals
M-29A	Glycol Ether	24,300 Gals
M-29G	Glycol Ether	24,300 Gals
M-54BF	Glycol Ether	7,200 Gals
M-60BF	Glycol Ether	2,700 Gals
M-17	Glycol Ether	5,100 Gals
M-57BF	Glycol Ether	25,200 Gals
M-129	Methanol	12,900 Gals
M-200B	Methanol	22,500 Gals
M-6C	Glycol Ether	331,000 Gals
M-15	Glycol Ether	22,500 Gals
M-5	Glycol Ether	22,500 Gals
M-22	Glycol Ether	22,500 Gals
M-8	Glycol Ether	22,500 Gals
M-71A	Glycol Ether	47,000 Gals
M-72A	Glycol Ether	23,700 Gals
M-2A	Glycol Ether	88,300 Gals
M-43	N-Butanol	14,500 Gals
M-44	N-Butanol	14,500 Gals
M-44A	n-Propanol/Ethanol	22,500 Gals
M-29B	Glycol Ether	24,300 Gals
M-29D	Glycol Ether	24,300 Gals
M-29F	Glycol Ether	24,300 Gals
M-10B	Out of Service	1030,000 Gals
M-52BF	Out of Service	5,400 Gals
M-59BF	Out of Service	2,700 Gals
M-65	Out of Service	22,500 Gals
M-6E	Out of Service	331,000 Gals
M-6F	Out of Service	331,000 Gals
M-6H	Out of Service	331,000 Gals
M-12	PMC	13,400 Gals
M-64BF	PMC	25,000 Gals
M-6B	PMC	331,000 Gals
M-58BBF	Glycol Ether	15,000 Gals
M-62BF	Glycol Ether	8,600 Gals
M-63BF	Glycol Ether	25,000 Gals
M-29H	Glycol Ether	24,300 Gals
M-61BF	Glycol Ether	2,700 Gals
M-148A	Glycol Ether	20,200 Gals

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)h. PolySolv/Glycol Ethers Area: (continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M-148B	Glycol Ether	20,200 Gals
M-29E	Glycol Ether	24,300 Gals
M-29C	Glycol Ether	24,300 Gals
M-36	Caustic 20%	62,500 Gals
M-55BF	DGA	7,200 Gals
M-67BF	Dodane	5,000 Gals
M-66BF	Isopropanol Amine	5,000 Gals

i. Flexible Foam Area:

Polyol A	Flexible Polyol	120 Gallons
Polyol B	Flexible Polyol	60 Gallons
Polyol C	Flexible Polyol	120 Gallons
Polyol D	Flexible Polyol	60 Gallons
TDI	Toluene Diisocyanate	300 Gallons
ABA	Methylene Chloride	60 Gallons
Water	Deionized Water	20 Gallons
Amine	Amine Catalyst	7 Gallons
Auxiliary Amine	Amine Catalyst	2 Gallons
Silicone	Silicone Surfactant	7 Gallons
Tin	Tin Catalyst	7 Gallons
FR (No PRV)	Flame Retardant	24 Gallons
Flush	Methylene Chloride	5 Gallons
M4	Polyol 71-357	
M5	Polyol R-370	
M6	MDI	
M7	Polyol PL 824	
M8	MDI	
M9	Polyol 70-600	
M11	Fyrol PCF	
M13	Silicon Glycoll-5450	
M18	Terol 2561	
M23	ISO Blend Tank	
M24	ISO Blend Tank	
M26	ISO Blend Tank	
M25	ISO Blend Tank	
M17	ISO Blend Tank	
M14	Polyol Blend Tank	
M16	Polyol Blend Tank	
M51	Polyol Blend Tank	
M52	Polyol Blend Tank	
M53	Polyol Blend Tank	
M27	Polyol Blend Tank	

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)i. Flexible Foam Area: (continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M28	Polyol Blend Tank	
M30	Polyol Blend Tank	
M33	Polyol Blend Tank	
M29	Polyol Blend Tank	
M31	Polyol Blend Tank	
M32	Polyol Blend Tank	
M34	Polyol Blend Tank	
M35	Polyol Blend Tank	
	A Froth Blender	
	B Specialty Area	
	Fugitives	

j. USF Area:

M80	Storage Tank R-22	
M81	Storage Tank R-22	
M82	Storage Tank HFC-134a	
M83	Storage Tank HFC-134a	
M84	Storage Tank HFC-134a	

k. Polychemicals Area:

M-1	Strip Tank	10,566 Gals
M-11A	Stripper Hold Tank	10,566 Gals
M-11B	Stripper Hold Tank	10,566 Gals
M-18	Stripper Hold Tank	23,700 Gals
M-26	Stripper Feed Tank	23,700 Gals
M-27	Stripper Hold Tank	23,700 Gals
M-28	Stripper Hold Tank	23,700 Gals
M-31	Stripper Feed Tank	23,700 Gals
M-47	Filter Feed Tank	12,750 Gals
M-49	Filter Hold Tank	12,750 Gals
M-64N	32-56P	110,100 Gals
M-82A	Stripper Feed Tank	23,430 Gals
M-82B	Stripper Feed Tank	23,430 Gals
M-83A	Stripper Hold Tank	23,430 Gals
M-83B	Stripper Hold Tank	23,430 Gals
M-85	Filter Feed Tank	
M-90B	DEG	
M-90D	DEA Weigh Tank	
M-90E	Weigh Tank	
M-90G	Precursor Strip	
M-90I	30-56P Weigh Tank	

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)k. Polychemicals Area: (continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
M-91C	Acetic Acid	1,818 Gals
M-91D	WT-90,000P	3,008 Gals
M-91E	Weigh Tank	
M-91G	Phos. Acid	1,818 Gals
M-91SA	Receiver	250 Gals
M-91SB	Receiver	
M-93A	Blend Tank	5,201 Gals
M-90R	DEA	
M-93B	Condemned	
M-93G	Treatment Tank	
M-93J	Treatment Tank	
M-24	Nonyl Phenol	23,700 Gals
M-25A	Alfol-610	23,700 Gals
M-25E	Liquid KOH	12,750 Gals
M-55	Glycerine	23,700 Gals
M-93F	PT-777P	4,320 Gals
M-99G		6,100 Gals
M-99I	20-150P	4,100 Gals
92A	Surf/Fluid	2,000
92	PEGS B	2,000
92C	Surf/Fluid	3,500
92D	Surf/Fluid	3,500
92E	Surf/Fluid	3,500
92F	Surf/Fluid	2,500
92G	NonFoam	4,000
92H	20's	4,000
93H	20's/30-33	6,000
92I	20's	4,000
93I	20's	4,000

l. Pilot Plant: State Emission Point No. - JA

R-1	850 gal. Reactor
R-2	750 gal. Reactor
R-3	200 gal. Reactor
R-4	20 gal. Reactor
R-5	25 gal. Reactor
R-6	750 gal. Reactor
R-7	20 gal. Reactor
R-8	1000 gal. Reactor
R-10	10 gal. Reactor
R-11	10 gal. Reactor
R-12	25 gal. Reactor

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)1. Pilot Plant: State Emission Point No. - JA (continued)

<u>Plant Identification</u>	<u>Insignificant Facility</u>	<u>Size/Rate</u>
R-13	200 gal. Reactor	
R-14	200 gal. Reactor	
R-15	30 gal. Reactor	
R-16	30 gal. Reactor	
R-17	20 gal. Reactor	
R-18	200 gal. Reactor	
T-1	3000 gal. Polyol Storage	11-145
T-2	2600 gal. Polyol Storage	
T-3	500 gal. Caustic Storage	
T-1600	1600 gal. Oxide pressure vessel	
T-200	200 gal. Oxide pressure vessel	
T-100A	100 gal. Oxide pressure vessel	
T-100B	100 gal. Oxide pressure vessel	
Oxide A	~25 gal. Cylinder	
Oxide B	~15 gal. Cylinder	
Oxide C	~6 gal. Cylinder	
Oxide D	~4 gal. Cylinder	
T-18A	300 gal. Storage/Treatment	
T-806	200 gal. Storage	
T-807	200 gal. Storage	
T-810	500 gal. Storage	
-	3-stage vacuum jets with 2 barometric condensers	
-	oxide scrubber tower	
T-20	WFE ('10 sq.ft.) with Stokes Vacuum Pump and Carbon Drums	
-	(2) ADI WFE's (50 sq.ft.ea.) With Vacuum Pumps vented to Carbon Drums & (5) 6000 gal. Isotainers (I-801,802,803,804,805) vented to Carbon Drums	
-	Kinney Vacuum Pump (R4)	
-	Kinney Vacuum Pump Dryer Vent	
-	Stokes Vacuum Pump (R16)	
-	Vacuum Pump (R18)	
-	Caustic Scrubber (R14,17,18)	
-	Catch Tank (R14,15,16,17,18)	
-	Catch Tank - 3000gal. (R1,2,13)	
-	Ventilation Roof Fans	
-	Ventilation Air Trunks	

Note: Includes ancillary equipment not listed above.

m. Microelectronics Area:

Isopar Tank
 EEA Tank
 Novolak Storage Tanks
 Scale Blower

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)n. Ethylene Oxide Area Storage Tanks

M-3	Isopar Surge	20,000 gal
M-40	Isopar H	66,000 gal
NA	Oxygen Plant Tanks (various)	
NA	Nitrogen Plant (BOC gases) Tanks (various)	

o. Ethylene Oxide Area Reactors and Purification Columns (incl. ancillary equipment)

R-4	Ethylene Oxide Reactor
R-5	Ethylene Oxide Reactor
A-2	Coolant Separator
A-3	Coolant Separator
A-4	Ethylene Oxide Absorption Tower
A-5	Carbon Dioxide Absorber
A-6	Carbon Dioxide Stripper
A-56	Residual EO Absorber
A-51	Ethylene Oxide Stripper
A-53	Light Ends Column
A-54	Ethylene Oxide Purification Column
A-55	Acetaldehyde Column
A-302A	Glycol Flash Tank

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

Compliance with annual emissions and processing limitations imposed pursuant to 401 KAR 50:035, Section 7(1)(a), and contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.

SECTION E - CONTROL EQUIPMENT CONDITIONS

Pursuant to 401 KAR 50:012, Section 1(1) and 401 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the cabinet which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

1. When continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a. Date, place as defined in this permit, and time of sampling or measurements.
 - b. Analyses performance dates;
 - c. Company or entity that performed analyses;
 - d. Analytical techniques or methods used;
 - e. Analyses results; and
 - f. Operating conditions during time of sampling or measurement;
2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained at the source authorized by this permit for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality.
3. The permittee shall allow the Cabinet or authorized representatives to perform the following:
 - a. Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are kept;
 - b. Have access to and copy, at reasonable times, any records required by the permit:
 - i. During normal office hours, and
 - ii. During periods of emergency when prompt access to records is essential to proper assessment by the Cabinet;
 - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times shall include, but are not limited to the following:
 - i. During all hours of operation at the source,
 - ii. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii. During an emergency; and
 - d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements. Reasonable times shall include, but are not limited to the following:
 - i. During all hours of operation at the source,
 - ii. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii. During an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

5. Reports of any monitoring required by this permit, other than continuous emission or opacity monitors, shall be reported to the Division's Owensboro Regional Office no later than the six-month anniversary date of this permit and every six months thereafter during the life of this permit, unless otherwise stated in this permit. Data from the continuous emission and opacity monitors shall be reported to the Director in accordance with the requirements of Regulation 401 KAR 59:005, General Provisions, Section 3(3). All reports shall be certified by a responsible official pursuant to Section 6(1) of Regulation 401 KAR 50:035, Permits. All deviations from permit requirements shall be clearly identified in the reports.
6. In accordance with Regulation 401 KAR 50:055, Section 1, the owner or operator shall notify the Division for Air Quality's Owensboro Regional Office by telephone as promptly as possible any deviation from permit requirements, including those due to malfunctions, unplanned shutdowns, ensuing startups, or upset conditions. Pursuant to Regulation 401 KAR 50:035, Section 7(1)(e), the notification shall describe the probable cause of the deviations and corrective actions or preventive measures taken.
7. The permittee shall certify compliance with the terms and conditions contained in this permit, annually on the permit issuance anniversary date to the Division for Air Quality's Owensboro Regional Office and the U.S. EPA in accordance with the following requirements:
 - a. Identification of each term or condition of the permit that is the basis of the certification;
 - b. The compliance status regarding each term or condition of the permit;
 - c. Whether compliance was continuous or intermittent; and
 - d. The method used for determining the compliance status for the source, currently and over the reporting period, pursuant to 401 KAR 50:035, Section 7(1)(c),(d), and (e).
 - e. Other facts the Division may require to determine the compliance status of the source; and
 - f. The certification shall be postmarked by the thirtieth (30) day following the applicable permit issuance anniversary date.
8. In accordance with Regulation 401 KAR 50:035, Section 23, the permittee shall report all information necessary to determine its subject emissions.
9. Pursuant to Section VII.3 of the policy manual of the Division for Air Quality as referenced by Regulation 401 KAR 50:016, Section 1(1), results of performance test shall be submitted to the Division by the source or its representative within forty-five days after the completion of the fieldwork.

SECTION G - GENERAL CONDITIONS**(a) General Compliance Requirements**

1. The permittee shall comply with all conditions of this permit. A noncompliance shall be (a) violation(s) of state regulation 401 KAR 50:035, Permits, Section 7(3)(d) and is also a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) and is grounds for enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
2. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition.
3. This permit may be revised, revoked, reopened and reissued, or terminated for cause. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - a. If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to Regulation 401 KAR 50:035, Section 12(2)(c);
 - b. The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.;
 - c. The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

4. The permittee shall furnish to the Division, in writing, information that the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit.
5. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority. The permittee shall also provide additional information as necessary to address any requirement that becomes applicable to the source after the date a complete permit application was submitted but prior to the release of the draft permit.

SECTION G - GENERAL CONDITIONS (CONTINUED)

6. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit.
 7. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance.
 8. Except as identified as state-origin requirements in this permit, all terms and conditions contained herein shall be enforceable by the United States Environmental Protection Agency and citizens of the United States.
 9. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6).
 10. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance.
 11. This permit shall not convey property rights or exclusive privileges.
 12. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Cabinet for Natural Resources and Environmental Protection or any other federal, state, or local agency.
 13. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry.
 14. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders.
 15. Permit Shield: Except as provided in State Regulation 401 KAR 50:035, Permits, compliance by the affected facilities listed herein with the conditions of this permit shall be deemed to be compliance with all applicable requirements identified in this permit as of the date of issuance of this permit.
 16. The pipeline equipment count listed per production area reflects an approximate count of the equipment as of the date of issuance of this permit. The permittee may add or remove pipeline equipment from each of the production areas without a permit revision as long as the equipment continues to comply with all applicable requirements.
- (b) Permit Expiration and Reapplication Requirements
1. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division.

SECTION G - GENERAL CONDITIONS (CONTINUED)**(c) Permit Revisions**

1. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of Regulation 401 KAR 50:035, Section 15.
2. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority thirty (30) days in advance of the transfer.

(d) Construction, Start-Up, and Initial Compliance Certification Requirements

1. Construction of process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
2. Within thirty (30) days following commencement of construction, and within fifteen (15) days following start-up; and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Division for Air Quality's Owensboro Regional Office in writing, with a copy to the Division's Frankfort Central Office, notification of the following:
 - a. The date when construction commenced.
 - b. The date of start-up of the affected facilities listed in this permit.
 - c. The date when the maximum production rate specified in the permit application was achieved.
3. Pursuant to State Regulation 401 KAR 50:035, Permits, Section 13(1), unless construction is commenced on or before 18 months after the date of issue of this permit, or if construction is commenced and then stopped for any consecutive period of 18 months or more, or if construction is not completed within eighteen (18) months of the scheduled completion date, then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Extensions of the time periods specified herein may be granted by the Division upon a satisfactory request showing that an extension is justified.
4. Operation of the affected facilities for which construction is authorized by this permit shall not commence until compliance with the applicable standards specified herein has been demonstrated pursuant to 401 KAR 50:055, except as provided in Section I of this permit.

SECTION G - GENERAL CONDITIONS (CONTINUED)

5. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct a performance demonstration on the affected facilities in accordance with Regulation 401 KAR 50:055, General compliance requirements.
6. Pursuant to Section VII 2.2.(1) of the policy manual of the Division for Air Quality as referenced by Regulation 401 KAR 50:0016, Section 1.(1), at least one month prior to the date of the required performance test, the permittee shall complete and return a Compliance Test Protocol (Form DEP 6027) to the Division's Frankfort Central Office. Pursuant to 401 KAR 50:045, Section 5, the Division shall be notified of the actual test date at least ten (10) days prior to the test.
7. All construction and operating permits issued previously are hereby null and void.

(e) Acid Rain Program Requirements

1. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

(f) Emergency Provisions

1. An emergency shall constitute an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or other relevant evidence that:
 - i. An emergency occurred and the permittee can identify the cause of the emergency;
 - ii. The permitted facility was at the time being properly operated;
 - iii. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and,
 - iv. The permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division within two working days after the time when emission limitations were exceeded due to the emergency. The notice shall meet the requirements of 401 KAR 50:035, Permits, Section 7(1)(e), and include a description of the emergency, steps taken to mitigate emissions, and the corrective actions taken. This requirement does not relieve the source of any other local, state or federal notification requirements.
2. Emergency conditions listed in General Condition (f)1 above are in addition to any emergency or upset provision(s) contained in an applicable requirement.
3. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof.

SECTION G - GENERAL CONDITIONS (CONTINUED)

(g) Risk Management Provisions

1. The permittee shall comply with all applicable requirements of 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall:
 - a. Submit a Risk Management Plan to U.S.EPA, Region IV with a copy to this Division and comply with the Risk Management Program by June 21, 1999 or a later date specified by the U.S.EPA.
 - b. Submit additional relevant information if requested by the Division or the U.S. EPA.

(h) Ozone depleting substances

1. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
 - a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - c. Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166.
 - e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
 - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
2. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

SECTION H - ALTERNATE OPERATING SCENARIOS

Not Applicable.

SECTION I - COMPLIANCE SCHEDULE

This section contains compliance schedule requirements as required by Kentucky Regulation 50:035, Permits, Section 7(2)(a). Progress reports on this schedule must be submitted at least semiannually, or at more frequent intervals if required in the specific conditions outlined below. Reports shall include the following items: (a) Dates scheduled for achieving each milestone, and the actual date that compliance is achieved; and (b) An explanation of why dates in the schedule of compliance were not or will not be met, and preventive or corrective measures adopted to ensure that compliance with future items will be brought back on schedule.

1. To implement any new monitoring, recordkeeping, and reporting requirements included herein, the Division hereby authorizes a one hundred twenty (120) day compliance schedule, beginning with issuance of the draft permit, for the following emission points:
 - a. ADI/TDI/ADI Adducts Area:
Drum & cylinder fill station packed tower scrubber [EP# LN (5-29)] to monitor scrubber liquid flow and vacuum level once per batch.
 - b. Polymer Polyols Area:
Acrylonitrile storage tank temperature to be monitored once per shift.
 - c. Polychemicals Area:
 - i. Batch vacuum levels for 12 steam jet eductor systems to be monitored once per batch including the following:

M-92 S jets (E.P. # FL or 19-114)	M-92I,93I,98R jets (E.P.# FC or 19-176)
M-93J(E.P. # FC or 19-180)	M-92C,92D (E.P.# FD or 19-182)
M-92A,92B (E.P.# FD or 19-183)	M-92N,93N (E.P. # FC or 24-112)
M-92L,93L (E.P.# FC or 24-111)	M-92G,93G (E.P.# FC or 19-178)
M-92H,93H (E.P.# FC or 19-177)	M-92E,92F (E.P.# FC or 19-179)
M-93T (E.P.# FK or 19-185)	M-92K/M,92M (E.P.# FE or 24-84)
 - ii. Batch vacuum and liquid product flow rate for the following eductor systems to be monitored once per batch:
A-30 Column (E.P.# FA or 24-109)
A-106 Column (E.P.# FB or 19-175)
T-82A/M-98T Column (E.P.# FA Or 24-109)
 - iii. Within 120 days after permit issuance, statistical control limits for batch vacuum levels at each reactor vent or stripper column steam jet eductor shall be established pursuant to Table 3 under the Polychemicals area.
 - iv. Within 120 days after permit issuance, the reactor jet condenser system shall be operated within the statistical control limits established by a Startup, Shutdown, Malfunction Plan.

SECTION I - COMPLIANCE SCHEDULE (CONTINUED)

- d. Microelectronics Area: Batch scrubber flow and scrubber solution assay (% NaOH) for the following systems to be monitored once per batch:
 - TEA/TETN Scrubber (E.P.# HK or 20-29B)
 - R-302 scrubber system (E.P.# HT or 20-47)
 - R-303 scrubber system (E.P.# HW or 20-52)
 - Exhaust blower scrubber (E.P.# HQ or 20-50)

- e. 2A1 Anionic Surfactants Area:
 - i. Sulfuric acid scrubber flow and acid concentration (EP# 31-33)
 - ii. Caustic scrubber flow and sodium hydroxide concentration (EP# 31-30)